

New Media in Higher Education Market

Edited by
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Publishing House of the University of Economics
in Katowice

New Media in Higher Education Market

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**Edited by
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Justyna Matysiewicz**



Katowice 2015

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Introduction

Traditional universities built institutional structure and practice around the centrality of libraries in providing teachers, researchers and students with access to books and manuscripts. Those universities also communicate with the environment, like candidates, alumni, business, and decision-makers and so on in traditional way. The revolution in information and communication technologies (ICTs) has changed how people can gain access to information in way that have shaken the foundations not only of the library, books, press, etc., but also of higher education and learning more generally. Nowadays, higher education institutions must use ICTs in ways that reconfigure access to information, people, services and technology itself. New media can enhance programs in distance education, can attract traditional courses as well can improve communication inside and outside university. But it is still open question as to whether they will be designed and used in ways that enhance the learning activities of individuals, classrooms, library, administration and university as a whole. The success of new media implementation in higher education are enabling the restructuring of universities in ways that might support, undermine or restructure traditional campus-based institutions of higher education and blur boundaries between remote and campus-based practices and institutions.

The purpose of the initiative has been the publication of the discussions which took place during international conference on *New media and higher education – opportunities and threats* host by University to Economics in Katowice on 15-17 June 2015. This conference, organised within the project “Boosting internationalisation. Strengthening relations between University, candidates, students, alumni and employees with the use of new media” provided wonderful opportunity for academics and professionals from all over the world to share their knowledge, skills, and experience in the field of higher education institutions development and implementation new technologies and media in process of education as well other activities of universities on very competitive international market.

The general mission of this book is to help academicians and administration staff from higher education institutions to create new approach to use new technologies and media in teaching processes as well for internal and external communication. It should be underline that modern teaching and communication in higher education institutions must be developed that covers the estimation of synergy effects, the compatibility and interoperability problems, and business and social as well ethical values creation.

The target audience of this book will be composed of researchers and professionals working in the higher education sector. Academic teachers, administration staff from promotion and international offices should be interested in this book. This book should help them to rethink what they do, how they are doing and to encourage them to create better usage of new media in their activities at universities.

The entire publication is divided into seven parts and contains selected papers presented at the conference. First part provides inside to changes in environment of higher education institutions. Second one presents selected aspects of innovations in both teaching as well administration processes at universities. Part three is focus on different new media which can be applied to higher education institutions. In part four there are papers which describe new tools and technologies for higher education institutions. Next part presents cases of using social media by different universities. Part six focus on problem of attitudes of students and teachers toward new media application in educational process. Part seven, which conclude this book, discusses range of papers dedicated to relations between universities and labour market in aspect of new media usage. The book does not cover all the important problems and issues of new media in higher education business. It allows, however, prepare them as identification, presenting the importance and role of new media in contemporary universities.

Sławomir Smyczek
Justyna Matysiewicz

Acknowledgment

We would like to acknowledge the generous support of the University of Economics in Katowice as well of the University of Liechtenstein and Norwegian University of Science and Technology in organising the international conference on “New media and higher education – opportunities and threats” and preparing this publication as one of the results of the project “Boosting internationalization. Strengthening relations between University, candidates, students, alumni and employees with the use of new media”, financed with the EEA and Norway Grants.

Particularly, we would like to thank for great support from Herwig Dämon from University of Liechtenstein and Wolfgang Laschet from Norwegian University of Science and Technology. Special thank goes to members of executive committee of this international conference: Joan Ball – St. John’s University, New York, USA, Wojciech Dyduch – University of Economics in Katowice, Poland, Diana Ionita – The Bucharest University of Economic Studies, Romania, Fridrik Larsen – University of Iceland, Iceland, Andrea Sólyom – Széchenyi István University, Hungary, Robert Tomanek – University of Economics in Katowice, Poland and all of our partners who provided invaluable service.

We would like to thank to conference honorary patrons: Lena Kolarska-Bobińska – Minister of Science and Higher Education and Leszek Żabiński – Rector of University of Economics in Katowice. We are also grateful to our keynote speakers: Edwin van Rest – founder and CEO of StudyPortals and Oliver Müller – the Institute of Information Systems at the University of Liechtenstein for outstanding opening presentation and all participants at our conference who present papers and created genuine atmosphere of friendly collaboration.

Our thanks are not complete without mentioning the efforts of many professors, assistants, and administration staff from the University of Economics in Katowice, who created our international conference professional, informative, thought-provoking and have provided strong organisational support. Particularly we would like to thank to members of Organising Committee: from University of Economics in Katowice: Magdalena Skowron – Chairman, Edyta Lachowicz-Santos – Programme Chairman, Izabela Gajda-Perek – Coordinator, Marek Kiczka – Promotion and PR Manager, Katarzyna Zajdel – Logistic Manager, and Beata Witczak – Financial Manager, from Norwegian University of Science and Technology: Wolfgang Laschet – Consultant, and from University of Liechtenstein: Herwig Dämon – Consultant.

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Sławomir Smyczek
Justyna Matysiewicz

Part I

New environment of higher education institutions

University in the internationalisation process based on experience of the Jan Kochanowski University in Kielce

Marcin Szplit

Introduction

According to Horizon 2020 programme collaboration and internationalisation of academic institutions in all European Union countries became one of the significant signs of scientific strength. In most call for proposals it is compulsory to find at least two partners from two different countries, but usually number of the partners in consortia is far greater than minimal. It shows the importance of internationalisation of the universities especially from the new European Union member countries including Polish universities.

1. Construction of The International Cooperation Competence Centre (ICCC)

From year 2011 to 2013 the Jan Kochanowski University in Kielce was involved in the program financed by the Marshall Office called “The circles/spheres of innovation”. The reasons why the University started this project were:

1. The institutions of the Świętokrzyski Region do not have any rich experience in the field of international projects – there have been just a few examples of such projects before.
2. There is no institutional mechanism to assist participating institutions from provinces in international programs and projects – years ago there was a Local Contact Point for the EU Framework Programmes with no advanced competencies.
3. The institutions do not show any interest in participation in international projects.
4. The level of knowledge in terms of available opportunities to participate in international programs is very limited.

It also characterises the province, where there is a dynamic process of development based on regional and national programs, including investments in infrastructure, on an unprecedented scale, which are related to the creation of knowledge (innovation infrastructure), i.e. laboratories, Kielce Technology Park, the Regional Centre for Science and Technology, or financial background such as loan or guarantee funds. Without the international collaboration the development is characterised by a strong dependence on local knowledge and competence.

The answer to the problem was setting of The International Cooperation Competence Centre at the Jan Kochanowski University in Kielce. The Centre was based on “Business Model Generation” ideas.

Methodology of “Business Model Generation” focuses on finding links between the 7 key areas of every business (by default, each entity): (i) partners, (ii) resources, (iii) processes, (iv) values, (v) relationships, (vi) distribution channels, and (vii) customers. By defining and analysis of the relationship one searches for the answer to the key question: what is the criterion for success of the company (organisation). Consequently expanding the most important areas the other becomes dependant, so that the level of general expenditure was optimal for a given situation on the market [Osterwalder, Pigneur, ed., 2010, p. 46].

The result of “Business Model Generation” according to The Competence Centre (ICCC) is presented in the Table 1.

Table 1. Summary of key areas of the International Cooperation Competence Centre

1. MO Office of Innovation 2. MO Department of Promotion 3. MO Department of Regional Policy 4. University – Department of International Cooperation 5. SCITT 6. The National Focal Point PBUE 7. The network of contact points NCP 8. The Focal Point ESPON 9. The Focal Point CIP 10. Development Foundation for Education Systems 11. National Centre for Research and Development 12. Implementing Authority for the EEA 13. The Implementing Mechanism Swiss	PROCESSES/ACTIVITIES ICCC 1. The search for sources of financing of international projects. 2. Seeking the relationship between research and commercialisation activities of universities and competitions for international projects. 3. Searching the relationship between innovative activity in the region and competitions overseas projects. 4. Finding opportunity to connect institutions from the Świętokrzyskie Province, international consortia. 5. Finding opportunities for internationalisation of new initiatives and institutions. The search for province development challenges and opportunities to direct them through internationalisation KEY RESOURCES: 1. Human resources ICCC: a. Management b. Agent of international cooperation c. Technical staff 2. Knowledge a. Knowledge of competition and its rules b. Knowledge of mistakes c. Knowledge of the resources of the region d. Practical knowledge concerning writing applications and projects. 3. Contacts: a. From partners b. From lobbying institutions c. From the experts d. From financing institutions	VALUE OFFERED FOR CUSTOMERS 1. Information about the contests/competent and focused knowledge. 2. Search for partners/facilitate participation in projects. 3. Assistance in preparation of applications/Sharing competence and responsibility, Meeting Professional. 4. Assistance in the administration of realised projects/ /reduce the risk of the project, minimising involvement in the peripheral areas. 5. Assistance in defining values and organisational research capacity for the needs of internationalisation. 6. Improving scientific and research activities through internationalisation/ /enhancement of knowledge and skills by linking them with the international environment. 7. Strengthening the effects of the transfer of technology through financial support for the development of international programs / output acceleration on the market of new technology and its development. The provision of good practices in the areas covered by international cooperation / /facilitation and improvement actions	CUSTOMER RELATIONS 1. Relation oriented improvement of institutions and individuals, and raising the quality of services. 2. Relationship-oriented building a competitive advantage entity/person in its environment. 3. The relationship-oriented benchmarking institutions. 4. The relationship oriented to seek opportunities for additional sources of financing and earn money. 5. The relationship-oriented outsourcing of competence to ICCC. The relationship-oriented prestige CONTACT CHANNELS 1. Online Tools: a) The internet ICCC, spinno.pl b) E-mailing c) Social networking sites 2. Head to Head: a) Participation in meetings of thematic and local combined with a presentation ICCC; b) The organisation of individual and group meetings for regional communities; c) Visits to institutions. 3. Inclusion in system solutions: a) Databases	TARGET: 1. Enterprises 2. Universities a. Research institutes b. Researchers c. Transfer centres d. The organisational units 3. Public institutions: a. Local government administration b. Educational c. The organisational units 4. Business institutions: a. The Technology Park b. Chambers of commerce c. Financial institutions and financial parameters d. The operators of business zones
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Table 1 cont.

<p>COSTS ICCC: (i) The team ICCC, (ii) Promotion, (iii) Accommodation and office supplies, (iv) Foreign trips, (v) The organisation of meetings and information days (rooms, facilities, experts), (vi) Appropriations own contribution to ICCC projects, (vii) The costs of counselling/mentoring.</p> <p>SOCIAL COSTS "SUCCESS" ICCC: (i) The resignation of the easier projects, (ii) A larger effort in preparing the application, (iii) Higher risk of failure, (iv) The need to learn new forms of support</p>	<p>INCOME ICCC: (i) The application preparation services, (ii) Project management services, (iii) Advisory services in the preparation/implementation of projects, (iv) Surcharges on their own projects.</p> <p>SOCIAL INCOME "SUCCESS" ICCC: (i) Access to sophisticated knowledge, (ii) Competitiveness at international level – financial independence of regional resources</p> <p>INCOME ICCC: (i) The application preparation services, (ii) Project management services, (iii) Advisory services in the preparation/implementation of projects, (iv) Surcharges on their own projects.</p> <p>SOCIAL INCOME "SUCCESS" ICCC: (i) Access to sophisticated knowledge, (ii) Competitiveness at international level – financial independence of regional resources</p>
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2. Development of ICCC

According to the European experience, including for example: ProTon Europe network, it can be concluded that centres with the functions similar to ICCC, should be active in the following areas of university activities:

1. Cooperation with local business schools, other universities and local governments in order to implement the medium-term regional development policies with particular emphasis on enriching the cooperation with foreign entities.
2. International exchange of academic staff and students.
3. Initiation of projects, research and teaching with participation of regional, national and international institutions.
4. Initiating the creation of new economic entities with the participation of international capital, as part of its long-term regional development policy.

There are two main approaches in the functioning of centres of competence: obligatory with ICCC's engagement in the management of international cooperation at the university, or more common approach in form of so-called "open systems". Observation of the effectiveness of the centres similar to ICCC lets make the conclusion that if there is "coercion" the efficiency decreases. The decisive factor in the use of the professional service for the ICCC setting or development of international cooperation may be, or not, compulsory. The choice of compulsion means should be strongly anchored in tradition, practice and culture of the university and strategic directions of development of the University.

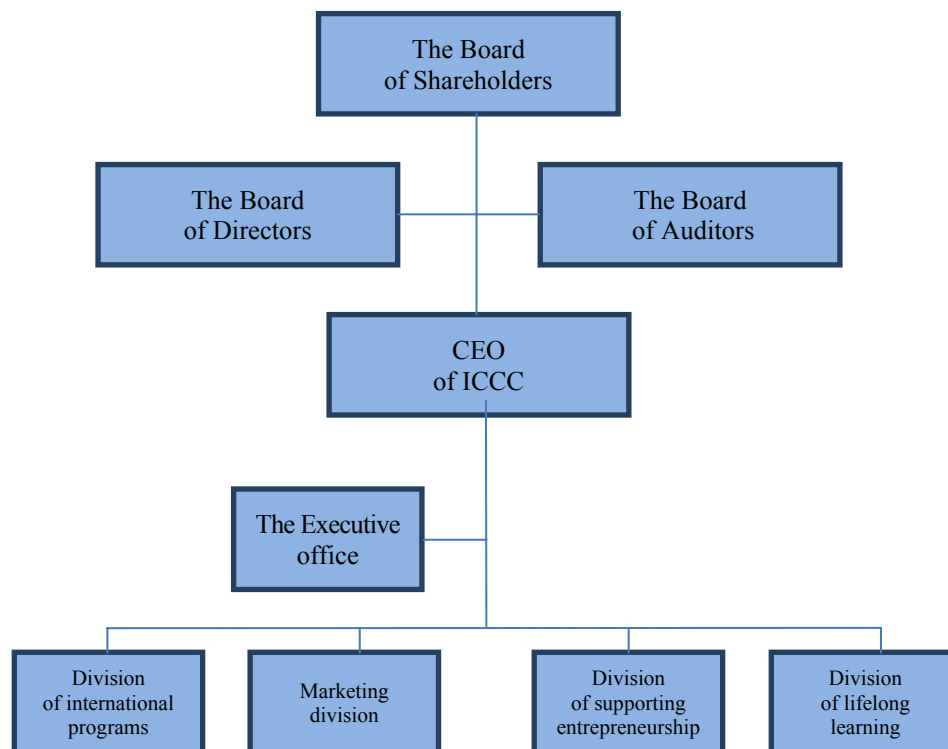
To decide on the legal form of the ICCC's, there are two basic approaches. The first is the creation of a unit of intra-university, inter-acting as a unit or as part of another intra-university units. The second possibility is the creation of a separate entity by the University in the form of associations, foundations, or a company. The distinct entity can be established only by the home university or jointly with other institutions, e.g. local governments, universities, businesses, or individuals business environment.

Past experience indicates that partners gain greater efficiencies if extracted from the university. The university, as the owner or co-owner, still retains influence on the directions of development of the ICCC and the way it operates.

Considering the creation of legal possibilities of the ICCC, it seems that the most appropriate legal (recommended) should be Ltd. Creating a business entity in the form of a limited liability company, as allowed under the current law of higher education, on the one hand provides a founder with control of the Company, on the other hand – gives partners the opportunity to make daily decisions in the Company in a flexible and fast way.

It may be recalled that in the light of the amendment to the Higher Education Act, in force since academic year 2011/2012, Rector, with the consent of the Senate, may create an entity in the form of commercial law. The organisational structure is shown in Fig. 1.

Figure 1. The organisational structure of the ICCC



The key issue, in addition to the organisational structure, the ICCC is a selection of the personnel, especially senior management, which shall consist of people having business experience, charisma, familiar with the specifics of the economic market and the rules of functioning of the university. For the management of the company (CEO) the university should appoint an experienced person, and the staff of the company should include mainly young people, creative, ambitious and challenging for professional development. The time required to train a new employee, prepared to run a selected section of the company, is min. 2 years.

The ICCC should be equipped with start-up capital and basic infrastructure, the type of space, furniture, equipment type computers, printer, photocopier and multimedia connections. Normally, such a task can get financing from the EU funds. The experience of the European network ProTon Europe confirms that it is necessary to provide funding for the first 3 to 5 years. The volume of the financing support requires a further financial analysis. On the basis of the regional and Finnish experiences it can be assumed that the minimum period of earnings allow the balancing of costs should amount to five years, while the total return on “investment” should generally occur only after 10 years.

Another factor important in initiating international cooperation, difficult to clearly define, is the interpersonal partnerships between Polish and foreign scientists. It is known that the participation of Polish scientists in the key European programs aimed at scientific research and their implementation into industry, which is the Horizon 2020 Programme, is negligible. The ICCC’s ambitious should be to initiate activities that should eventually lead to the participation of scientists from the Świętokrzyskie Region in Horizon 2020. This will be possible when scientists from the region have better than today conditions for direct contacts with foreign scientists and participate in such events as:

1. International conferences (presentation of their scientific achievements).
2. Internships at research institutions and innovative EU enterprises.
3. International seminars Industry in the Region Świętokrzyskie, held with participation of coordinators of the EU Horizon 2020.

The seminars should be focused on modern technologies, consistent with the priority directions of development of the Region (Regional Strategy of Innovations, Foresight), which are for example:

1. Intensification of the exchange of scientists among the European universities,
2. Intensification of foreign exchange students,
3. Extending the educational offer at regional universities including classes in English.

Conclusions

In the article the author shares some information and own experiences from internationalisation process of the Jan Kochanowski University in Kielce. The article emphasises the crucial role of cooperation between different types of organisations not only the university but regional government and authorities as well. In two chapters the author lists the steps of creating a structure that helps the scientist in establishing international cooperation and knowledge transfer.

Now in Year 2015 at the Jan Kochanowski University in Kielce a new structure called MOVEO University Foundation is functioning. It performs the tasks of knowledge transfer and internationalisation. The main results of the ICCC were two international projects. In both the University was a partner.

References

Osterwalder A., Pigneur Y., ed. (2010): Business model generation. A handbook for visionaries. Game Changer and Challengers. John Wiley & Sons, USA.

New technologies in the study of shared musical heritage from local to global

Pilar Barrios Manzano

Introduction

This contribution brings together a long history of research work that was set in train in 1980 by the scholar presenting this work by studying the music of Extremadura and its use in education. Local studies follow. Starting from this point, the intention is to show one of the main lines of the University of Extremadura's Research Group "Patrimonio musical y educación" [www2] (Musical heritage and education), which started operating as a group in 2001. From the very beginning we were committed to new technologies and a desire to upload all the results of the various investigations to the internet. For that reason we designed the portal Patrimonio Musical Extremeño. Legado, investigación y transmisión (Extremaduran Musical heritage. Legacy, research and transmission). With the passage of time this beginning of a local study in situ has been widened to cover the theme Extremadura en el encuentro de Culturas (Extremadura in the Encounters of Cultures) [Danza y Ritual, s.a.]. It has been used to house a number of website pages with the results of the research projects that have been undertaken.

Once knowledge of what is closest in space and time has been attained, it is very important to understand, from participating observation, numerous examples of cultural encounters and exchanges that occur sometimes from geographical closeness and at others from historical circumstances. Observing and understanding the existence of a shared cultural heritage, from one's own viewpoint and from that of the other, of people in a global world, leads us to work for education in values of respect, coexistence and solidarity.

This initial proposal was strengthened after 1992 with participation in the celebrations of the Fifth Centenary of the Encounter with America, which coincided in time with the laws that expelled the Arabs, Jews and gypsies from the Iberian Peninsula. The student body of the Faculty of Education of the University of Extremadura was directly and intensely involved in these activities.

We have run a number of different regional R&D&I projects, as well as two national ones, in which we studied from Extremadura the cultural exchanges with Portugal and the Latin-American countries with representatives of different countries that have joined our work team.

After the International Congress: *Danza y ritual en el Encuentro Iberoamericano* [www5] (Dance and Ritual in the Ibero-American Encounter), held in the Faculty of Education from 13 to 15 October 2010 we set up the Permanent Ibero-American Seminar of Musical Heritage and Education, with representatives from fifteen countries [www3]. This international network started with fifteen Ibero-American universities and is in constant growth. We are making progress with them, in this research profile and in transfer of teaching practices with our students on both sides of the Atlantic. We will shortly open virtual classrooms so that they can communicate with each other. A YouTube channel has already been opened [www6] to upload representative audiovisual material of what is being generated.

We are now looking most closely at the encounter between Europe, Africa and America, and the relations among all the world's cultures through the similarity of musical manifestations, instruments, dances, romantic ballads and songs, from the most basic to the most sophisticated with a view to the European Horizon 2020 Programme.

The last project in this line ran from 2011 to 2014, as part of the National R&D&I Programme of the Spanish Ministry of Economy and Competitiveness, with the theme “*Música, danza y ritual en el Encuentro Iberoamericano. El patrimonio compartido y su transcendencia en la educación*” (Music, dance and ritual in the Ibero-American Encounter. The shared heritage and its significance in education). Reference: HAR2011-30164-C03. This research was co-ordinated from the University of Extremadura (Principal Investigator: Pilar Barrios), and with the universities of Valladolid (Principal Investigator: José Ignacio Palacios) and of the Basque Country (Principal Investigator: Maravillas Díaz), in collaboration with other Spanish, Portuguese and Latin-American universities.

1. Starting hypothesis

The above comments do not offer a new hypothesis, but we base ourselves on previous studies, that is to say, on the existence of a heritage that, as well as being linguistic, links the Iberian Peninsula with Portugal and the Latin-American countries. We point out the wealth of cultural diversity, with the clear idea that every people, every group has its own signs of identity and specific belonging. However, there is a series of items that, from the Iberian communities, have demonstrated a contribution to other peoples and cultures in the world, receiving in turn items from those peoples and cultures.

Our initial philosophical proposal is based on the goals of UNESCO, as well as the Ibero-American Cultural Charter, which was drawn up following the 16th Ibero-American summit (Montevideo, 2006) and given new strength in the First and Second Plans for the Alliance of Civilisations (2008-2014) with “the task of fostering the development of projects and actions aimed at favouring mutual knowledge and respect for cultural diversity, at promoting understanding and transmission of civic values and of a culture of peace”.

In this same line, our previous experience and studies show that it is in cultural manifestations, and especially in those of the oral tradition, that this common heritage can be observed and transmitted. For that reason our starting hypothesis is the study of the shared heritage by means of comparative studies, through international research teams of accredited experience. With the preparation of music-teaching materials for education (formal, non-formal and informal) we intend to stimulate the construction of a culture of peace, focused on exchange, intercultural dialogue and co-operation, in order to achieve better co-existence at national and international level.



The pipe and the drum. Examples of a common heritage. Drummers from around the world. Montage by Ángel Domínguez

2. Goals

1. To study the examples of musical heritage that denote signs of common identity, points of origin and confluence of cultural manifestations among the various communities in Spain and of these with the Ibero-American countries, taken as an example of cultural exchange. This common heritage will be studied and analysed at the same time as giving recognition to diversity as an example of wealth and enrichment of the Ibero-American space
2. To look into the teaching aspects of the Ibero-American heritage (music, dance and rituals) that contribute to knowledge and highlighting of this heritage through education and the acquisition of basic skills.
3. To investigate the possibilities of Ibero-American heritage as a teaching resource in the processes of teaching and learning and to prepare teaching material that will facilitate understanding and knowledge of this heritage
4. To encourage coexistence and good understanding between countries that have historically been opposed or in confrontation, according to the period, starting from knowledge and awareness of the signs of common identity that are present in traditions, music, dance and in other cultural manifestations.

3. Work team

In the seminar that we set up in 2010 we proposed the creation of international and interdisciplinary groups to provide a complete view from each of them from the point of view of its subject and/or from its country, to provide its own view and to understand that of the other.

The team of researchers with whom we have worked on this project from Extremadura are Ángel Domínguez, Juana Gómez, Martín Gómez-Ullate, Ricardo Jiménez, and also Victoria Eli of the Universidad Complutense de Madrid, Susa Herrera of the Universidad de Vigo, José Carlos Belmonte of the Instituto de Educación Secundaria La Arboleda, Lepe (Huelva), José Filomeno Martins Raimundo of the Escola Superior de Artes Aplicadas of Castelo Branco (Portugal), Guillermo Contreras and Gonzalo Camacho of the Universidad Nacional Autónoma of Mexico DF (Mexico), Arlington Pardo of the Universidad del Atlántico of Barranquilla (Colombia), Marita Fornado of the Universidad de la República of Montevideo (Uruguay), Chalena Vázquez of the Universidad Católica of Lima (Peru) and Zulma Mónica Pittau and Marcos Otaño of the Escuela Superior de Música of Posadas, Misiones (Argentina). In general, all of them have a number of publications related to the theme under study and others are being generated in the group.



Initial group



Guillermo Contreras, Mexico; J. Carlos Belmonte, Spain; Marcos Otaño, Argentina

4. Working method

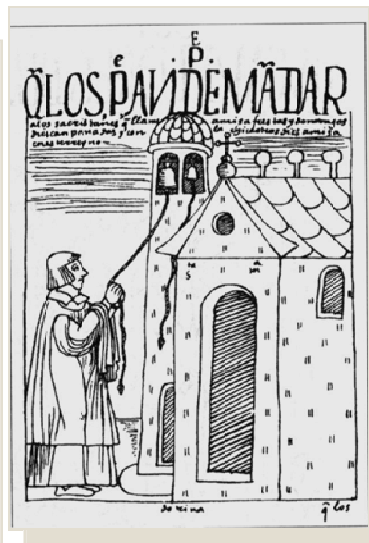
Through previous field work and collation among the different researchers samples of the common heritage are being selected through the study of the documentation, bibliography, instruments, dances and songs.

In Extremadura, sometimes the starting point is the field work and the ethnographical description of the different festivals on both sides of the ocean, while on other occasions visits are made directly to archives where documents and musical scores are consulted that make it possible to understand the structure and functioning of the Iberian and European church choirs and their significance in Latin America.

The participants work in their own university classrooms on the theme under study, which has been previously developed in their research, with the involvement of the students. There are also a variety of workshops inside the university classrooms and elsewhere to study the heritage in situ.



Study and gathering of the shared organological heritage: Bell foundry in Montehermoso-Church choirs. Portable organ and music stand in Plasencia Cathedral



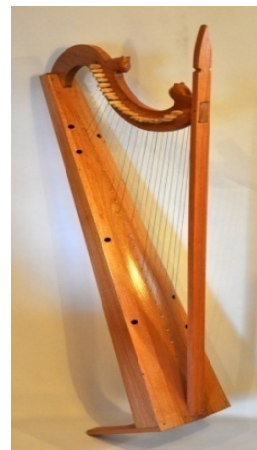
Images of the earliest church choirs in Peru.
Guaman Pola de Ayala: Nueva crónica y buen gobierno, 1615.



Angel Musician with harp. 15th
century, Guadalupe Monastery,
Cáceres, Spain



Chimú dance, work of Bishop
Martínez Compañón in Trujillo,
Peru. 18th century



Mexican harp. Collection
of Guillermo Contreras. Mexico
DF, 20th century



Workshop of Masters students specialising in Musical Education, dancing the Danza del Guiador, Corpus Christi, Portezuelo. Extremadura, Spain. Primary schoolchildren also take part



Children from the Colegio Punta Arenas in Chilean Patagonia. They are singing “Yo vendo unos ojos negros” (Chilean song that crossed to Spain in the 60s and became part of the popular Spanish repertoire)

Exhibitions of instruments are also organised, and re-creations with music [www1] and dance in which university students do practical sessions with the middle-school children.

Every year seminars have been organised with the teachers from the various countries, which have given rise to new samples to make comparisons between the manifestations in the different countries.

The foreign teachers who spend time at the University of Extremadura work directly with the students of the faculty and in the workshops with the children of the Colegio San Francisco in Cáceres and the Colegio Hernán Cortés in Medellín. The children themselves expound the cultural encounters through the superposition of historical buildings of the common songs, dances, etc.



Instruments from Spain, Colombia and Mexico. Pedrilla-Guayasamín Museum



Exhibition of Extremaduran and Ibero-American Musical Heritage and activities with students of the University of Extremadura and children from the Colegio San Francisco. Pedrilla-Guayasamín Museum

Conclusions

In December 2014 the research group met at the fourth Ibero-American and African Seminar for Research on Heritage [www4] to present the results of the project and its continuity on other occasions.

After all these years of research, and continuing in the same line, we can say that we will find very many manifestations; many more than we expected at first. This is not surprising for since the encounter with America people have travelled across the Atlantic Ocean, and throughout history around the rest of the world, transmitting their traditions, instruments, clothing, etc. Significant examples of this have remained in the imagination, the iconography, the organology, the documentation, the oral tradition, and even in the products of the earth.

Through workshops and exhibitions we have done puppet theatre, dances, recreations, songs, etc. and through analytical study we have shown that some of them came from Africa to Spain and Europe, and moved from there to Latin America, producing a beautiful mingling of human and artistic manifestations. Others came and mingled on this side too, and there are some of which we do not know if they went or came or both at once, in a continuous flow back and forth.

Sometimes a view of the “other” lets us understand parts of our nearest culture. Instruments that disappeared in Spain but remain in paintings or murals, anonymous or signed, are fully current in other Latin-American countries. While in Spain some instruments have disappeared and given way to others, in America they were superimposed, so that the catalogue of instruments is larger there. As for traditions, there are cases such as the Pastorela de Navidad (Nativity play), the *Officium pastorum*, liturgical drama of medieval European theatre, which has disappeared in most of Spain, but is widespread in Mexico, the Candelaria in Colombia and other countries. We could give many more examples that must be presented now.

The workshops have proved to us the good welcome by our students and the reciprocity between the children of the different schools, many of whom are immigrants, by studying and explaining to each other their customs, music, dance and instruments.

The children that we have worked with are starting to see themselves as citizens of the world, regardless of their origin or circumstances. It must be understood that our lives depend on the ups and downs of history and that our ancestors too had to emigrate at one time or another. It is through education and culture that a change can be made in the vision and position of the individual in the world, and in the shared cultural manifestations there is an important basis on which to do so.

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[www2] <http://www.unex.es/investigacion/grupos/musaexi>
[www3] <http://www.unex.es/investigacion/grupos/musaexi/noticias/creacion-del-seminario-permanente-iberoamericano-de-patrimonio-musical-y-educacion#.VUIDkZP07TE>
[www4] <http://www.seminariopatrimoniocompartido.es/>
[www5] <https://danzayritual.wordpress.com/>
[www6] <https://www.youtube.com/user/GRUPOMUSAEXI>

Sustainable student recruitment strategies for international students – case study of the School of Engineering at SRH University Heidelberg

Katja Kuhn

Introduction

Over the last couple of years the number of international institutions that are actively involved in international student recruitment has grown considerably. Keeping this in mind it means that the market of student recruitment is changing. This article will develop some different hypothesis related to international student recruitment and try to show some approaches to respond to those issues, referring to a case study done at SRH University Heidelberg's School of Engineering.

Hypothesis 1: International Academic Competition is increasing: Nations that previously only sent students abroad, have started to improve the quality of their own higher education and especially in the last decade developed strategies and policies to attract international potential candidates themselves. Countries like Malaysia, China, Russia and South Korea as well as Brazil start to become international or better regional education hubs themselves.

Hypothesis 2: More and more countries are trying to compete for students from the same group of countries.

Hypothesis 3: At present global international student mobility flows are changing in two ways in particular. Firstly, with the economic and political powers shifting more towards east, academic or educational mobility patterns are beginning to change in this direction, too. Secondly, the regionalisation of international student mobility is accelerating, but surprisingly students will do so by staying in their own region.

Hypothesis 4: Various international studies expect that global competition for students (and especially for the most qualified among them) will intensify in the future. That means countries that are attracting a high number of international students should not take those levels of incoming student mobility for granted, since changing regional preferences might create different opportunities as well as looser.

Hypothesis 5: New Media will become playing a crucial role in international student communication as well as international student recruitment.

Hypothesis 6: International student recruitment is increasingly being integrated into more complex concepts of international higher education cooperation, such as international double degree programmes and bilateral or multilateral research.

Sustainable and continuous efforts of academic institutions to recruit international students are necessary, as well are high-level education programmes and better and professionalised support mechanisms for international students, since student choices for study destinations are mainly influenced on the added value of studying abroad in a particular country / at a specific institution perceived by each person individually.

Nations will have to make their decision about their future standing and attractiveness in the international academic arena: International student recruitment will then be most effective when there is – at the national level – a focused international student recruitment strategy that is synchronised with the nation’s foreign economic and cultural policies and consistently followed over a longer period of time.

1. International student decision making – theoretical background

Students have different reasons to choose a particular study course programme and study location (country, region or city). To better understand the motivations of these students and develop more effective recruitment policies, it is essential for universities to analyse how students make their decision about a potential study location and course programme, and which factors led them to make their choice.

With respect to the choice of location, the academic literature mainly talks about the “push” and “pull” factors. These factors can apply at the level of individual students, but can also be related to higher levels such as characteristics and policy measures of cities, regions, countries or indeed continents or supranational organisations (e.g. the European Union and the European Higher Education Area). Given the growing international competition between countries for high-quality students, it has become increasingly important to gain a better understanding of factors at the higher level that influence national and international policies and policy contexts. However, in terms of study choices, research in Germany has largely focused on domestic students only. Hence, the available literature on how international students arrive at their decisions on study destinations, and on the factors that influence those decisions, is limited.

Research on students' choices of destination countries and institutions can be divided into studies that focus on the decision-making process and those that focus on student motivations to study abroad. Research that focuses on the students' selection process is well established. In most cases, that process is viewed as containing multiple stages in which information is collected and analysed, and where decisions are made [an extensive analysis of the different models for domestic students can be found in Vossensteyn, 2005; for international students refer to: Fowler, 2009].

With regard to the selection process among international students, Chen's so called Synthesis Model seems to have the most face validity [Chen, 2007, pp. 271-306]. This study process model consists of the following three interplaying stages:

1. A predisposition stage, in which students assess their personal needs, collect information on studying abroad, and decide to do so.
2. A search/selection/application stage, in which students gather information on available alternatives and in the end select, take a decision and submit one or more applications.
3. A choice stage, in which students, after receiving offers of admission, reconsider the available alternatives (i.e. programme, institution, city, country, visa requirements, costs, etc.) and then take a final decision.

The studies focusing on student motivation to study abroad are more relevant for this particular study. These studies try to explain the factors influencing students to enrol in higher education and select a particular higher education institution and course programme. These are the so-called "student choice" models [Hossler, Schmidt, and Vesper, 1999; Vossensteyn, 2005]. The available research focusing on domestic students has led to three different models:

- Status-attainment models (also called sociological models),
- Economic models (also called econometric models), and
- Information-processing models (also called the combined models).

The applicability of these models for international students is limited, however, because many more factors can influence their choice process. This inherently means that student choice models for international students have to be more complex than the domestic student choice models.

Several studies try to fill this gap by designing student choice models specifically for international students [see Fowler, 2009; for an extensive discussion of these particular theoretical models]. What most of these models have in common is their adoption of the push and pull theory, which attempts to explain the fac-

tors affecting the decision-making of international students. The theory argues that there are basically two forces at play: push factors and pull factors. The push factors “operate within the source country and initiate a student’s decision to undertake international study”, while the pull factors “operate within a host country to make that country relatively attractive to international students” [Mazzarol, Soutar, 2002, p. 82].

Domestic factors encouraging international students to study abroad can be push factors. Push factors can roughly be divided into personal push factors and environmental push factors. The former relate to the personal characteristics, preferences and motivations of individual students. The environmental push factors relate, for instance, to national characteristics.

Not much research has been done so far about the individual push factors of international students. This is self-explaining, considering the large diversity of the international student group and the consequence this has for the extent to which results can be generalised. What we do know from existing research on domestic students is that students can be influenced by their parents’ socio-economic status, their relatives’ level of education and their own academic ability [Vossensteyn, 2005].

According to Chen’s Synthesis Model, the three most important influential sources for international students are the classical peers – their family/spouse, other students or friends, and professors. Chen found that the most important motivations to study abroad are the wish to acquire an advanced degree for personal satisfaction or to improve foreign language skills, and the importance of advanced degree for the student’s future career and salary level. In addition, students find it valuable to have an advanced degree from a Western country.

Besides these personal push factors, there are push factors that relate to the environment. Although better documented, these factors are rarely tested empirically. They can include the following:

- The unavailability of, and difficult access to, higher education (programmes) and/or cutting edge research,
- The value of a national higher education degree on the domestic labour market,
- A low value of a national higher education degree and/or work experience,
- A low quality and reputation of the domestic higher education and research,
- High recognition, acceptance and perceived value of foreign degrees by domestic employers and higher education institutions,
- Individual ties to another region, country, city and/or institution,
- The demographic, economic and/or political climate within the country of origin.

- The attractiveness of the environment in the country of origin (e.g. climate),
- The high availability of information of possible hosting regions, countries, cities and/or institutions,
- The level of domestic tuition fees and living costs, and
- Favourable financial (i.e. scholarships) and emigration policies in the country of origin.

A general picture can be drawn, from a study by McMahon [1992, pp. 465-482], which suggests that the lower quality and prestige of local programmes/ /institutions and the unavailability of desired programmes in the home country are important push factors for studying abroad. It is clear, however, that more research is required in order to gain more detailed insight into the influence of specific environmental push factors.

According to Mazzerol and Soutar [2002, pp. 82-90] (respondents coming from Taiwan, India, China and Indonesia), the five most important factors for deciding to study in a particular host country were the quality of its education, the fact that the qualifications of the host were recognised at home, the ease of obtaining information on the host country, the reputation of institutions in the host country, and knowledge of the host country.

From the above it can be concluded that the most important pull factors of a country are a high quality and good reputation of education, and a good knowledge and student awareness of the destination country. This means that other factors (such as those relating to tuition fees and living costs, and social and geographical linkages) are less important factors.

The main pull factors of a higher education institution are the following:

- A wide knowledge and awareness of an institution among students,
- A high perceived quality and reputation of the institution and its education and research,
- Recognition of degrees or other qualifications by the host institution and country of origin, and a high marketability of the degree/qualification,
- The costs of higher education (tuition fee level, the availability of financial aid, travel expenses, and living costs),
- The nature of governance and administrative procedures of a higher education institution,
- The safety level within the institution / on campus,
- The level of internationalisation of an institution (number of international students and staff, and the availability and diversity of international programmes),

- The living, study and work environment of an institution, and
- Social and geographical links (friends/relatives living or studying at the same institution, geographical proximity).

Compared with the other levels, the pull factors that operate at the institutional level have been researched more extensively. This is perhaps because at this level, it is easier to adjust features of the institutions to meet the international students' requirements. It is also important to know the exact pull factors for institutions, so that they can adjust their recruitment policies. It can be argued that, as compared with domestic students, important pull factors for international students to choose a particular institution relate to:

- The quality and reputation of the institution,
- The recognition of the institution's qualification (in the student's home country),
- The international strategic alliances of the institution,
- The quality of the institution's staff, and
- The size of the alumni base and the existing international student population of the institution [Cubillo, Sanchez, and Cervino [2006, pp. 101-115].

The above results suggest that the institutional pull factors for an institution are largely in line with the national pull factors. Hence, also here, the pull factors related to the quality and reputation of the institution seem to be the most important factors pulling international students to an institution. One notable difference however is that at the institutional level, the cost of higher education plays a more substantial role. The specific characteristics of the institution, such as the overall level of internationalization, are also more important at the institutional level.

2. The situation in Germany

According to the OECD [2010, Chart C2.3, p. 315], Germany is the third most popular study destination in the world for international students with nine percent of its higher education population coming from abroad¹. Most of the international students in Germany are coming from China which has become Germany's most important partner in education and research cooperation thanks to explicit efforts by the German federal government, the German Academic Exchange Service (DAAD) and individual higher education institutions.

¹ It should be noted that DAAD & HIS data distinguish between *Bildungsausländer* (foreign inward mobile students that obtained their secondary school diploma outside of Germany) and *Bildungsinländer* (foreign non-mobile students who obtained their secondary school diploma in Germany). The 9% figure is based on the number of *Bildungsausländer* only. DAAD & Hochschul-Informations-System [2011].

Table 1. Bildungsausländer in 2014, by region of origin, number and in % of all Bildungsausländer at German higher education institutions

World region (DFG classification)	Bildungsausländer	
	Number	in %
Eastern Europe	57.063	26,1
Western Europe	41.371	18,9
North America	5.073	2,3
South and Central America	13.003	5,9
Africa	21.092	9,6
Southwest and Central Asia	20.742	9,5
South, Southeast and East Asia	59.635	27,2
Australia and Oceania	623	0,3
Total	218.848	100

Source: Federal Statistical Office; DZHW calculation, www.destatis.de (access: 1.05.2015).

Some higher education institutions in several German states are already having some difficulties in recruiting sufficient numbers of home students and this will become more crucial in the coming decade due to a declining birth rate. In consequence, some universities feel that they are under pressure to attract students from abroad.

The federal government has developed and sustained a clear internationalisation strategy to promote Germany as an attractive location for research, development and innovation in selected target countries, such as China, India and Brazil. As part of this strategy, the government continues international campaigns to promote German higher education and to compete for international students, doctoral candidates and graduates of German schools abroad. In addition, representatives from science, industry and politics have been asked to support the aims of this internationalisation strategy with a joint concept for promoting the strengths of German research. This strategy may be instrumental in attracting more research students to Germany.

3. Case study School of Engineering, SRH University Heidelberg

Communication and marketing measures to recruit foreign students achieve their best possible effect, if they are systematically planned and elaborated in the overall context of a marketing strategy.

This overall process for planning, implementation and controls of marketing communications in principle will keep its methodological validity regardless of the specific conditions of a university and the relevant action level. By contrast, the communicative content and thus also the design of the communication tools of the special features of a university or the courses offered have to fit. The effectiveness of Internet-based marketing efforts depends to a large extent on whether the communicative message will reach potential foreign applicants interest and if they recognised the message as useful and important.

In our case we tried to develop a suitable marketing communication strategy for our “Master in International Business and Engineering” programme, a Master of Engineering programme with major focus on renewable energies and sustainability. The task was to increase the international applicant number and develop a marketing communication strategy with a main focus on new media only.

Given this the following fields were analysed:

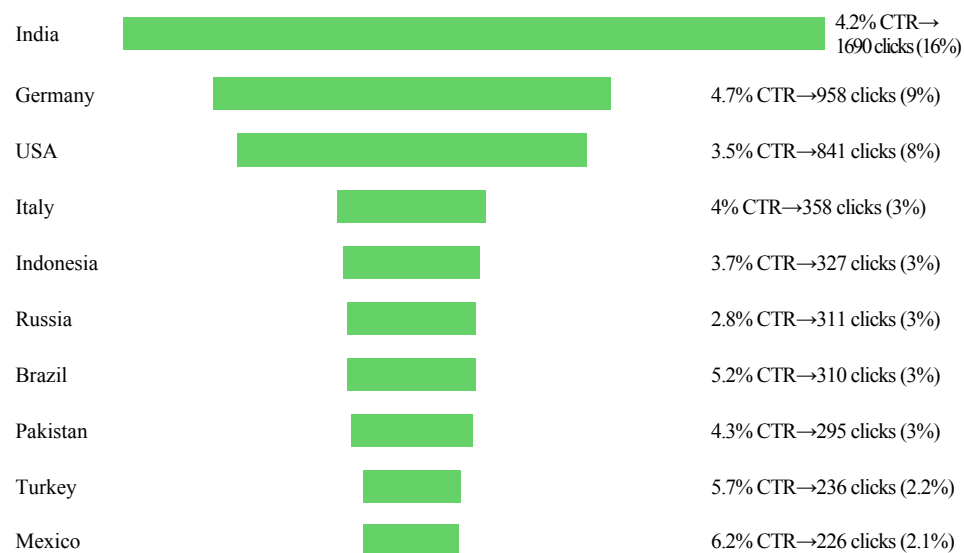
- Top country impressions of the already existing marketing tools,
- Top country clicks,
- Top search countries,
- Desired enrollment date,
- Age and gender distribution,
- Top applicant countries,
- Work experience,
- Management experience.

Table 2. Master in International Business and Engineering the overall advertising impressions

	Advertising Impressions	CTR	Program views (Clicks)	C/R	Filtered Leads
International Business an	288 028 → 3,7% →		10 700 → 12% →		1313
Total Average Per Program	288 028	3.7%	10 700	12.3%	1 313,0
Total Sum	288 028		10 700		1 313

Out of this the following countries were represented in the already existing online marketing tools.

Figure 1. Top 10 countries clicks



The subjects searched were analysed as well.

Here the top search topics were Business, Economics and Administration, International Business, Engineering and Technology and finally Engineering, all and interestingly with equal 25% of the overall distribution.

The preferred enrollment date was about 0-6 month prior to the requested intake and about evenly divided between those students searching about 6-12 years prior and more than 1 year prior the requested enrollment date, with a strong domination of male applicants in all three time cohorts.

Figure 2. Desired enrollment date



Out of the age distribution we could identify that about 75 % of applicants were between 21 to 30 (keep in mind that it was a Master programme we analysed) and 18% between 31 and 40 years of age.

Figure 3. Age distribution



It was not by surprise that the main group of applicants was male (75%), taking into consideration that it was an engineering programme where in Germany there is a general tendency that these topics will attract more male students than female ones.

Figure 4. Management experience

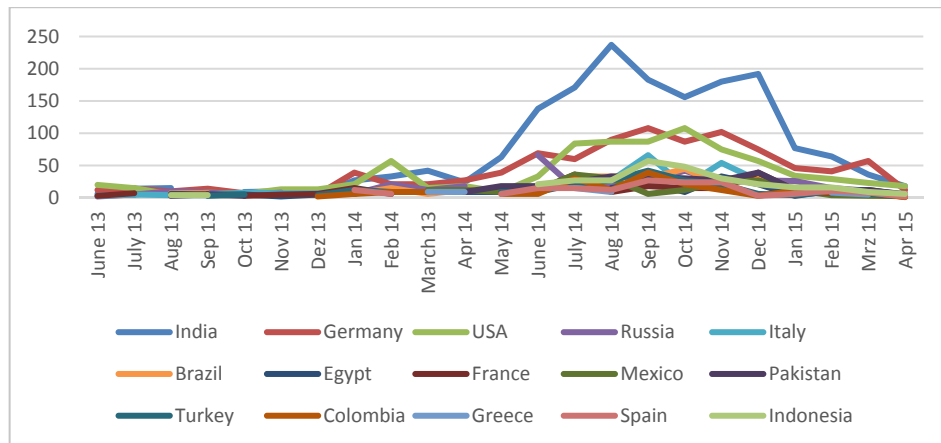


Taking this into consideration, the Master was only promoted by Social Media and not presented at any fair or other activity. Besides a review of the internet presence the following thoughts encouraged the use of the following online marketing tools:

- Virtual Fairs provided an opportunity to funnel prospective students to other social media platforms such as Facebook to continue engaging with them,
- Online Videos helped international students understand campus life and set more accurate expectations,
- Alumni Engagement: International alumni were activated as a resource for student recruitment opportunities through referrals.

The results were visible. The “clicks” for the Master programme increased significantly during the probation period and dropped again, after the campaigns had been stopped.

Figure 5. Overview demographic Clicks Master International Business and Engineering (June 2013 – May 2014)



Conclusions

The pace of growth and change in social media presents great chances for higher education institutions in terms of comprehending the value and opportunity of its use. On the one hand side it is cost effective and easy to start. The study presented show great potential for social media activities. It fits with the established communication flows and styles of modern youth and makes access to “trusted” information easier. On the other hand there is a serious lack of proven practices on what works and what does not as are measurable scientific tools. Building momentum and measuring the cost of human resources and time involved in social media communication can be challenging and it clashes with the established norms and traditions of higher education institutions related to communication flows and styles.

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Harvesting the collective intelligence in learning environment

Saad G. Yaseen & Khalid Al-Omash

Introduction

An organisation is intelligent only if it is able to nurture collective intelligence. The widespread adoption of social networking has effectively changed the way intelligence is developed [Malone et al., 2010]. It is a powerful platform that encompasses countless virtual communities and networks to share information, create knowledge, intelligence and wisdom. Massive participation in these social networks is reflected in the countless number of content ideas, and reviews that are stantly posted and discussed in social sites and the value of these user contribution is in their being collected together and aggregated into community. However, social networking sites are premature to apply collective intelligence [Gruber, 2006]. The key question remains how people and computers can be connected so that collectively they act more intelligently than any individual or group [Malone, 2010]. Today, universities are increasingly rethinking the fundamental methods of managing learning environment. They are open to other learning paradigms. Collective intelligence is one of the new emerging learning paradigm in recent years.

Collective is more than group. That is, collective does not require individuals with the same attitude or characteristics. Intelligence in the learning process refers to the ability to learn, to understand, and to adopt to an environment. Thus, collective intelligence refers to the collective ability of people to think and act in an effective and efficient way [Leimeister, 2010].

For the first time humans can act in mass collaboration or in groups using kind of collective intelligence once reserved for ants and bees but more with human in the space of the learning environment [Libert & Spector, 2008]. The potential of mixing knowledge seekers with knowledge providers offers vaster resources of learning and open – source innovation. Furthermore, the explosive growth of social media has provided people the opportunity to create and share content on a scale barely imaginable a few years ago [Romero et al., 2010]. It can be powerful platform of the collective intelligence applications. Thus, the present research contributes to the ongoing stream of research in harvesting collective intelli-

gence in the learning environment. The research concentrates on providing rich understanding and insight about the dimension of the collective intelligence paradigm in each learning environment.

1. Collective intelligence

Collective intelligence has been existed in a very long time. However, the explosive growth of using internet and social computing has enabled to emergence the new but not a magic paradigm of collective intelligence applications [Malone et al., 2010; Malone, 2008; Lesser et al., 2012]. Collective intelligence can be seen as an alternative of social media power within convergence culture [Jenkins, 2006] or an intelligence factor that explains group performance on wide variety of tasks [Woolley et al., 2010]. It is a new digital based form of we. The new and potent we is far smarter than singular me [Libert & Spector, 2008].

Thus, collective intelligence is a determining factor in competitiveness, creativity and human development in the knowledge economy [Levy, 2010]. As a part of his utopian vision, Levy conceptualised that in our new learning and knowledge economy we are passing from Cartesian cogito: I think, therefore, i am, to cogitamous: we think, therefore, we are [McGonigal, 2006]. The product of this new culture (we) would be a new digital learning application of the collective intelligence.

A review of literature confirms that CI has been widely used as a multidisciplinary field of social psychology, sociology, cognitive science, business, social computing, and information sciences [Riedl & Blohm, 2010; Leimeister, 2010; Steinbock et al., 2002; Howe, 2008; Atlee & Zubizarreta, 2003].

Recently, collective intelligence can be seen as a shared memories, ability of virtual communities, online distrusted problem solving human capacity to engage intellectual cooperation, a synergy of skills and resources to learn, and to share wisdom [Levy, 2010; Gan and Zhu, 2007; Lesser et al., 2012; Jenkins, 2006; Malone, 2008].

According to Atlee and Zubizarreta [2003] collective intelligence is a coherent integration of our diversity that is greater than any or all of us could generate separately, just as an orchestra is greater than the sum of its instruments. That is, CI is more than collected intelligence, it is an emerging augmentation of intelligence, collectivism, distributed mind and digital networking. Moreover, the synergy between collective intelligence and mobile social computing is an emerging stream of research and is still in its early stages coping with mobile technology and social computing.

Furthermore, collective intelligence is the synergy between mobiles, collectivism, intelligence, web-based collaborative systems and social media. It is the capacity of human collectives to engage in intellectual cooperation in order to create, innovate and invent. [Levy, 2010]. Web-based collaborative system or Web 2.0 technologies support collective intelligence by enabling users, knowledge seekers and knowledge providers to quickly, easily, securely share their ideas with others, combining flexibility with the ability to control and manage parts of the interaction [Greeg, 2009]. Thus, web-based collective intelligence system can improve the ability to share and understand learning needs by using digital network and social media applications.

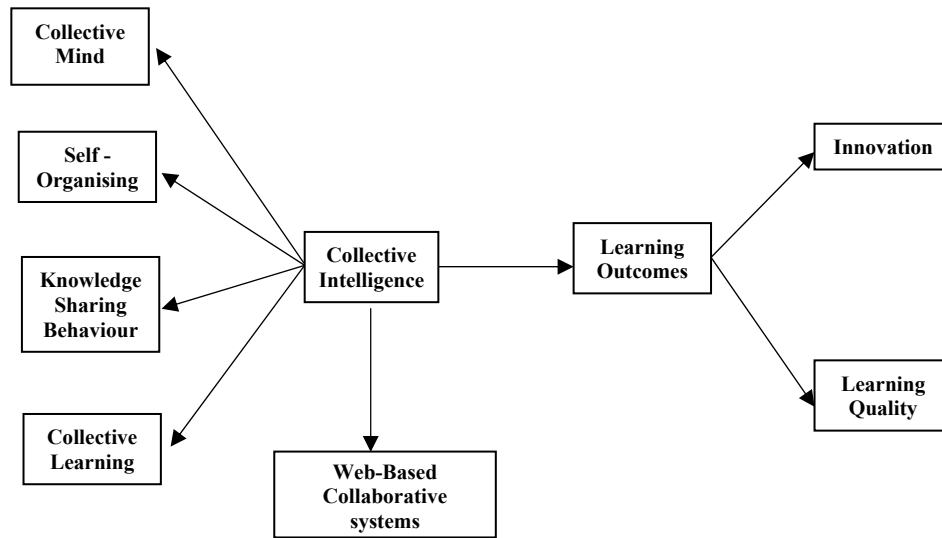
2. Collective intelligence in learning environment

In cyberspace, for the first time in human learning history, our entities as a human being is growing a universally interconnected common memory where knowledge and other intellectual intangible resources can be easily accessed and shared by any social media and collective intelligence applications [Levy, 2010]. Thus, collective intelligence provides educational opportunities for knowledge providers and seekers. It Comines individualised learning with anytime and anywhere learning. However, CI paradigm is more than group. It is a new paradigm shift in learning and computing of this century. The semantic Web and Web 2.0 visions aspire to contribute to more meaningful collective intelligence applications in learning and knowledge sharing [Kapetanios, 2008; Traxler, 2010].

The explosion of social networking sites bring collective intelligence systems into a learning environment. Could and mobile social networking as a web-based collaborative technologies has been a powerful collective intelligence platform for leveraging learning and sharing knowledge in mobile and internet space.

However, harvesting the collective intelligence in learning environment has received only limited attention from researchers to date. As a result, it is essential to explore the main dimensions of the collective intelligence in learning environment. These dimensions are collective mind, self-organising, knowledge sharing behaviour, collective learning and web-based collaborative system. Based on the literature review, the research model proposes expected learning outcomes include learning quality and innovation. Figure 1 illustrates the collective intelligence in the learning environment.

Figure 1. Collective intelligence model in learning environment



Collective thinking issuing from a collective mind in learning process is now searching for ways to bring learning needs to be socially robust and internally coherent. Thus, it is essential to distinguish the concept of a collective mind from a mass mind. Mass mind involves all participants think alike on a pre-determined way of thinking. In a collective mind every individual mind thinking and working independently [Brown, 2015]. Indeed there is evidence that collective mind can do learning job better than any scholar. In Surowiecki's wisdom of crowds, he argues that if you need an answer to a question, polling a group of participants usually provides a more accurate answer than asking one expert [Robson, 2012; Surowiecki, 2004]. What we need a collective mind, a coherent of our diversity that is greater than any individual mind. We need a free collective mind that allows to arrive a creative consensus within learning environment.

Self- Organising

Collective intelligence refers to ability of virtual communities to leverage of self-organisation [Levy, 2001] argue that collective intelligence system should be mobilised and coordinated knowledge, skills and imagination humanity in new and unexpected ways [McGonigal, 2008]. The synergy of skills, shared memories and intellectual resources stand in sharp contrast to the hermetic separation of learning activities. Thus, the success of collective intelligence depends on the self-organized collaboration of individuals to nurture a sufficient level of understanding.

Knowledge Sharing Behaviour

Knowledge sharing behaviour involves both explicit knowledge that can be structured in learning environment and tacit knowledge which can be obtained by individuals [Oliveira et al., 2015; Nonaka, 1994; Nonaka & Konno, 1998]. Sharing knowledge is one from many effort that can be used in learning process to improve quality and innovation. Knowledge sharing has also be reached from the perspective of game theory, assuming that sharing knowledge can be seen as a play with gains and losses at both sides and that the outcome of the game can be predicted by mathematical laws [Vermeulen et al., 2014]. However, the main factor for applying collective intelligence paradigm in learning environment is the creator of a culture of learning and innovation that brightest knowledge seekers and providers.

Collective learning has received a new meaning in recent years especially through the emergence of collective intelligence applications.

Inspired by such swarm intelligence collective learning would be in case that the individuals are smarter and more knowledgeable than the individuals of those biological swarms. Thus, collective intelligence is a shared leaning that emerges from the collaboration and competition.

It is strongly contributes to the shift of learning paradigm and process from the individual to the collective learning or convergence learning. Furthermore, collective learning is important for the democratising the learning process by collective learning and knowledge sharing. It is the capacity of human communities to engage in intellectual and academic cooperation to create value added learning [Iquider & Morita, 2011].

Conclusions

The purpose of this research is to explore dimension of collective intelligence in learning environment could and mobile social networking as a web-based collaborative technologies has been a powerful collective intelligence for leveraging learning and sharing knowledge in mobile and internet space. However, harvesting the collective intelligence in learning environment has received only limited attention from researchers to date. As a result, it is essential to explore the main dimensions of the CI in learning environment. These dimension are collective mind, self-organising, knowledge sharing behavior, collective learning and any kind of web-based collaborative systems. The research model proposed expected learning outcomes that can be measured by learning quality and innovation.

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Part II
Innovations in higher education processes

In-class simulation games – student learning in international environment

Justyna Matysiewicz

Introduction

The use of new media in teaching is becoming more and more common at higher education level. Internet, simulation games, social networking portals are the most frequently used tools. Well matched tools to the type of lecture content can help students understand concepts more quickly and remember them better than from a lecture. In the paper the business simulation game Markstrat will be presented as an effective tool for teaching marketing. The games may also help to form and develop the enterprising attitudes and to learn the methods of modern marketing management. For students, there is the possibility to be, e.g., a business manager who has to make decisions in the conditions of market strategy and competition. This paper includes a presentation of students' opinions about Markstrat simulation game as a marketing teaching method and an analysis of their opinions¹.

1. Simulation games in education

Computer games are regarded by some educationalists as highly engaging and it is hoped that by exploiting their highly compelling even addictive qualities that they can be used to help people learn effectively. Games-based learning has been applied in a wide variety of different fields including business and knowledge management [Christoph, 2007; Virtual Leader, 2010; Virtual University, 2010]. Their literature review shows that playing computer games confers a range of perceptual, cognitive, behavioural and affective and motivational impacts and outcomes. In their review the most frequently occurring outcomes and impacts were affective and motivational followed by knowledge acquisition/content understanding. This reflects the parallel interests in games as an entertainment medium but increasingly their use for learning [Hainey et. al., 2011].

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As Hailey et al. [2011] suggest computer games are considered by some educationalists to be highly motivating and engaging by incorporating features that have extremely compelling, even addictive, quality [Griffiths & Davies, 2002]. Connolly, Stansfield, McLellan, Ramsay, and Sutherland [2004] suggest that computer games build on theories of motivation, constructivism, situated learning, cognitive apprenticeship, problem based learning, and learning by doing. They also emphasize that by creating virtual worlds, computer games integrate “not just knowing and doing. Games bring together ways of knowing, ways of doing, ways of being, and ways of caring: the situated understandings, effective social practices, powerful identities, and shared values that make someone an expert” [Shaffer et al., 2004]. Games and simulations fit well into the constructivist paradigm and “generally advocate the active acquisition of knowledge and skills, collaboration and the use of authentic and realistic case material” [Christopher, Sandberg & Wielinga, 2003]. Ranchhod, Gura, Loukis & Trivedi [2014] discuss that educational games and simulations are often used as interchangeable concepts [Feinstein, Cannon, 2002], several authors [Garris, Ahlers & Driskell, 2002; Prensky, 2001; Sauve et al., 2007] outline their specific characteristics, which impact on their pedagogical application [Sauve et al., 2007]. Games are defined as a goal-directed, competitive activity (against the computer, another player, or oneself), conducted within a framework of agreed rules [Lindley, 2004]. The specific attributes of games are [Ranchhod et al., 2014]:

- players: Educational games involve learners who adopt role playing and decision making, either individually or as a group;
- goals: Educational games have both explicit (winning the game) and implicit (learning from the experienced situation) goals, that need to be properly aligned and integrated in their design and implementation [Garris, Ahlers & Driskell, 2002; Prensky 2001];
- rules: sets of guidelines that describe and shape the interaction between players and the game environment [Jenkins, 2005]; they specify the nature, structure, sequence and extent of allowable player action (Garris, Ahlers & Driskell, 2002; Gray, Topping & Carcary, 1998). In the case of educational games, these rules structure participants’ behaviour to maximise learning;
- conflict: In educational games, conflict provides the motivational and entertainment drives that increase participants’ involvement in the learning process (Prensky, 2001), while cooperation between group members for problem-solving can represent a primary skills development goal (Moizer et al., 2006);
- artificial character: games often propose a fictitious situation without reference to reality (Sauve et al., 2007).

On the other hand Ranchhod, Gurařu, Loukis & Trivedi [2014] say that a simulation is a simplified model of reality structured as a system, which includes clearly specified variables and dynamic relationships between these variables [Sauve et al., 2007]. A simulation has the following attributes [Ranchhod et al., 2014]:

- dynamic: simulations represent the evolution of a system through the movement and interaction of its components [Swanson & Ornelas, 2001];
- simplified: a simulation is an incomplete representation of reality, reproducing only its essential characteristics and introducing a level of abstraction [Cioffi, Purcal & Arundell, 2005];
- realistic: despite the simplification and abstractisation of reality, the simulation should realistically represent a real-life system and its functioning [Martin, 2003; Sauve et al., 2007]. Only in this situation the learning experience results in transferable skills applicable to real-life problems [Salas, Wildman & Piccolo, 2009].

Ranchhod, Gurařu, Loukis & Trivedi [2014] emphasise that despite their differences, games and simulations are compatible, and, properly integrated, can successfully complement each other to enhance the effectiveness of the learning process [Prensky, 2001]. Simulations games can be defined as simplified and dynamic representations of reality that are structured as interactive games in order to enhance the experiential learning process. Combining the attributes of games and simulations [de Freitas, 2006], they are designed as simplified but realistic systems, which are experienced through confrontational, challenging and engaging scenarios, with clearly defined goals and rules of interaction [Prensky, 2001; Sitzmann, 2001].

The idea of using simulation games in business is not new. These kinds of games have been used in business education since 1950. In conjunction with the rise of case-based approaches [Bransford et al., 1990] and experience-based learning theories [Wolfe, 1993], they have created a new concept of business teaching using experimental methods. The following list presents the advantages of business simulation games used as a didactic tool [Wawer et al., 2011]:

- interesting way of learning because the students may gather or examine the knowledge while playing the game;
- acceleration of the learning process through the active individual engagement of players;
- possibility to observe progress in the development of skills and improvement of qualifications;
- connecting the knowledge from different areas of business;
- strong motivation of the game participants towards active learning instead of passive receipt of lectures' content;

- shaping the skills of knowledge usage in practice;
- interactive character that enables players to quickly obtain information about the results of their decisions.

There is widespread use of games and simulations within business school curricula. A majority of these games addressed marketing or strategic policy issues. Bodo [2002] discussed the development of an in-class simulation of the classic prisoner's dilemma game with student-designed strategies. Innovative technologies are also adopted in the operation of games. For instance, Doyle and Brown [2000] implemented a business strategy game using e-mail and videoconferencing that involved five teams of postgraduate business students from universities in Ireland, France, and the US [Klassen & Willoughb, 2003].

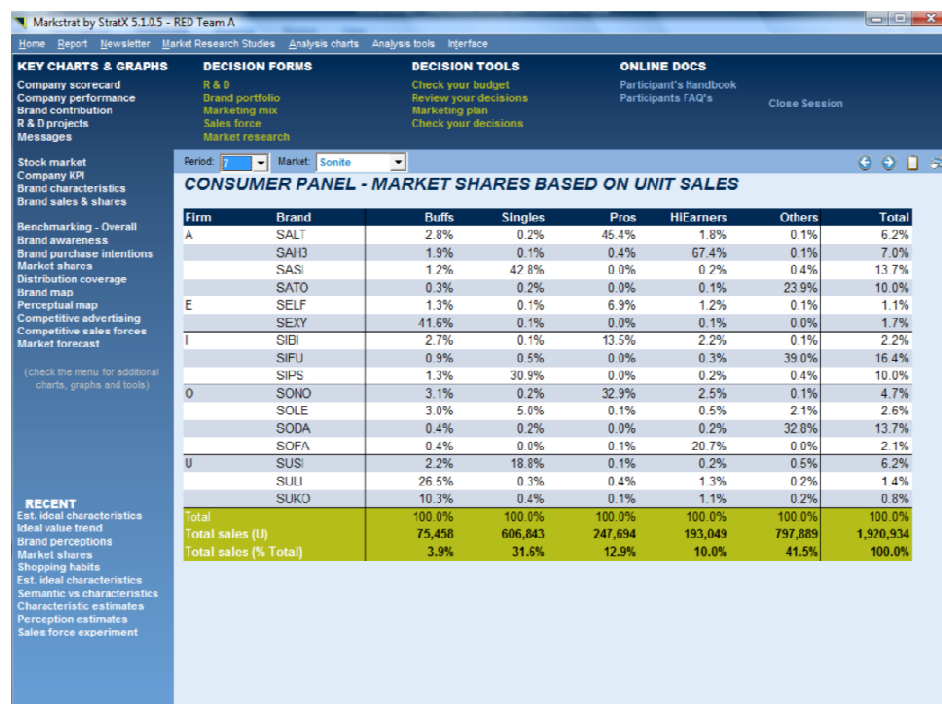
2. Description of the Markstrat game

Markstrat simulation is a marketing strategy simulation of a fictitious consumer goods industry in which the major projects are sonites and vodites. Companies compete by altering their marketing mixes to aim them at specific target markets while positioning them against relevant competitors. New products can be developed and launched via R&D strategies, and price, production, sales force and promotional decisions are made on a period-by-period basis. More than a dozen marketing research studies are possible including: benchmarking studies, consumer perceptions, semantic studies, competitor intelligence, forecasts, marketing experiments, and conjoint analysis. Markstrat has provided an excellent vehicle for the application of perceptual mapping, competitive analysis, and marketing positioning strategy learning. About the only complaint that can be conjured up about the simulation is that its products are fictitious and difficult for students to envision; however, this feature counters any false industry-specific beliefs that may be mistakenly taken away by students using simulations that use real products [Burns, 2005].

Success in Markstrat simulation depends upon gathering market and competitor information, organising and managing the increasing volumes of these data over time and as new products are introduced, weighing the evidence, using this to formulate and evaluate alternative courses of action and making decisions about which strategies to pursue. The work involved is too much for one person, so team-work becomes essential. Groups tend to adopt a functional division of tasks. Individual team members each report back to the whole group on one or more aspects of past performance and then make joint decisions in meetings on actions for the next period. Obviously, individuals in successful teams must

communicate effectively (primarily orally), manage each other's strengths and weaknesses, respect each other's opinions, meet the deadlines and make decisions. Leadership seems less important here because all aspects can be managed efficiently through consultation, but, given the protracted nature of the simulation, social interactions become important [Fenwick & Neal, 2001].

Figure 1. Markstrat presentation

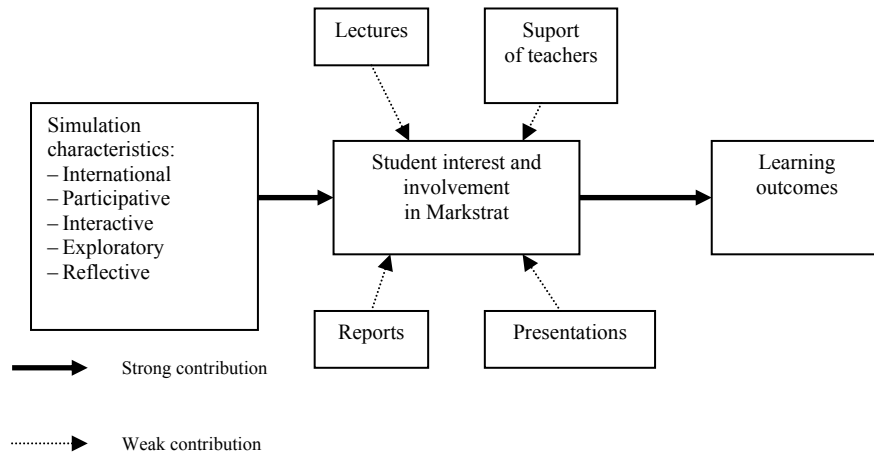


Source: [www1].

Markstrat is considered as one of the most realistic simulation games used in marketing education [Larrehe, Gatignon, Triolet, 2010]. It is also often used in the context of intercultural education which stresses the importance of working in international groups. Farrell [2005] illustrated a learning environment which incorporates simulations in an international business course [Tao, Yeh & Hung, 2015]. The main are shown in Figure 2.

In this environment, simulations like Markstrat with international, interactive, participative, inductive, reflective, and exploratory characteristics can be adopted with traditional pedagogical methods as supplements, including classroom lectures, textbooks, reports, and presentations to stimulate student interest and involvement and to accomplish the desired learning objectives (Tao, Yeh & Hung, 2015).

Figure 2. Learning environment for Markstrat



Source: [Farrell, 2005; Tao, Yeh & Hung, 2015].

In the literature it is also discussed the pedagogical characteristics of Markstrat. One of the more interesting present Ranchhod, Gurañu, Loukis & Trivedi (2014). On the basis of earlier studies done by De Freitas and Oliver (2006) detail context, learner specification, pedagogical considerations and tools for use in Markstrat were described.

Table 1. The pedagogical characteristics of Markstrat

Context	Learner specification	Pedagogic considerations	Mode of representation (tools for use)
1	2	3	4
Higher education school learning in business (marketing management) studies	Business school or professional learners (students)	This simulation game is a practical application of the Kolb Theory of Experiential Learning	Markstrat uses a friendly and intuitive interface, based on data and information display in the form of tables, graphs and diagrams
Classroom or IT laboratory based	The tool can be used either at Bachelor, Master, MBA or Professional Training level, either formally or informally The tool is designed for team-work, culture must be understood	Learning outcomes: The participation of international team members in the game leads to cognitive, affective and behavioural learning outcomes, related to the conceptual understanding of various business models and theories, team-work, interpersonal communication and collaboration, as well as the application of theoretical concepts and models into practice	The level and method of interactivity is adapted to a progressive experiential learning process derived from data analysis and team decisions taken during several periods. The input of teams is introduced at the end of each game period, being then processed by the software, which returns the data defining the competitive situation at the beginning of the next game period. During each game period, the teams have access to a vast array of data, which can be easily accessed using the game interface

Table 1 cont.

1	2	3	4
Students interact with the Markstrat software application using computers in practice sessions organised during the Intensive Programme with the associated course lectures	<p>Various types or learning styles can be accommodated by this simulation game, since team decisions require complex data analysis and a departmental specialisation of team members</p> <p>The internal flexibility of the simulation game allows the repeated application of the Kolb cycle of learning, leading to a progressive improvement of individual and team knowledge and skills</p>	The simulation game is embedded as a series of practical sessions or a compact residential program into the course plan of the tutor. Individuals and teams need different levels of attention, feedback and support from the tutor at different stages of the learning experience and cultural awareness of the international teams	Learning activities and outcomes achieved through the combination of a friendly interface, and a series of algorithms used for processing team decisions, and which define the competitive conditions that characterise the next game period

Source: Based on: [de Freitas, Oliver, 2006, pp. 249-264; Ranchhod et al., 2014, pp. 75-90].

3. IP Markstrat evaluation results

In the next sections the findings are presented focusing on participants opinions about Markstrat game. The opinions were collected during the implementation of Intensive Programme which was organised by Dukenet. Dukenet is an international union of Universities in the field of Commerce and Business established in 1995 in the Netherlands. The main goal of network is to create a platform of knowledge for both students and academics. The members of the network can participate voluntarily in all activities, organised within the network and co-ordinated by the coordinator or one of the other members. Current activities are in the field of: student exchange, staff exchange, intensive programs, European modules, curriculum development (European Bachelor/Master). Nowadays in the network are 14 universities from 11 countries. The main Dukenet collaborative projects are:

- LLP Erasmus Intensive Programme – NetAware “InterNET advanced promotional tools application for increasing AWAREness of social exclusions movement”;
- Intensive Programme MARKSTART Strategic Marketing Simulation;
- EMBS European Master in Business Studies (for more information [www2]).

Duknet Intensive Programme MARKSTART are organised twice a year. The main objectives related to the implementation of IP is to learn the principles of marketing management but also facilitation of international team-working and increase intercultural awareness. The study used an online questionnaire containing nine questions in a four-point Likert scale. Replies were received from 86 students, participants in the two simulation games in 2015.

Table 2. Do you agree or disagree with the sentence: evaluation of scales: from 4 (strongly agree) to 1 (strongly disagree)

Do you agree or disagree

	England	France	Germany	Finland	The Netherlands	Norway	Scotland	Poland	Belgium	Total
Good overall organisation	2.00	2.20	1.90	2.00	2.00	2.67	2.50	2.25	2.43	2.18
Appropriate facilities	2.67	3.80	2.60	2.50	3.00	2.67	2.50	3.00	3.00	2.87
Good working atmosphere	3.00	3.40	2.90	3.50	3.00	3.33	3.00	3.50	3.29	3.21
Intense work load	2.67	3.40	3.40	3.50	3.00	3.33	3.00	3.50	2.86	3.23
Beneficial for my future career	3.00	3.40	3.00	2.75	2.00	3.67	3.50	3.00	3.29	3.13
Comfortable accommodation	3.00	3.20	2.80	3.00	3.00	3.00	3.00	3.25	3.14	3.03
Peer assessment was helpful	1.67	2.00	2.43	2.50	2.00	3.33	3.00	2.75	3.00	2.56
Blog was a good channel for information	2.33	3.00	2.88	3.50	3.00	3.00	2.50	3.25	3.00	2.97
Knowledge of marketing improved	2.33	3.00	3.13	3.25	2.00	3.33	2.50	3.25	3.20	3.03
Total	2.52	3.10	2.78	2.94	2.53	3.15	2.83	3.08	3.02	2.92

Most of the answers was significantly positive. Answers to the questions: *how Markstrat improve your marketing knowledge* were 3.03, and *how beneficial that knowledge will be for my career development* – 3.13. The most satisfied groups were representatives of France, Norway and Belgium. 69% of participants emphasised the good working atmosphere and friendliness. It indicates a good preparation participants to work in an international environment. 34% definitely recommend participation in the game to other students, they mainly emphasised the educational and social values. Negative reviews appeared in relation to IP organisation (2,18) and communication with teachers (48% rated it as fair). It was emphasised not enough contact hours. 64.3% considered the work in an international environment as challenging, 4.8% as boring.

Conclusions

This paper has examined the theoretical importance of new media in education an example of international simulation games. Markstrat as an example of collaborative, simulation game was introduced. It highlighted the key advantages of new solutions mainly focus on: It highlighted the key advantages of new solutions mainly focus on: interesting way of learning, acceleration of the learning process and interactive character. It was also presented a part of the empirical research on the level of students' satisfaction with Markstrat. Results has shown the positive perception of this form of learning by students. It confirms the level of recommendation. The study will be extended to prove the effectiveness and efficiency of the simulation game.

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Innovation in quest for quality: Teaching & learning in the 21st century

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Introduction

Embracing innovation takes courage. It also takes strong leadership and organisational change. Internationalisation once was an innovative approach to guide the university but it has become mainstream for many universities in the West. In Central and Eastern Europe it is still, for the most part, a new phenomenon which requires more clear vision and strategic thinking, as well as readiness to critically measure its progress while ensuring appropriate financial support. A challenge lies in practical engaging internationalisation so that it helps in creating modern didactic and research institutions, preparing students for their professional life – and in line with the university mission.

The authors argue that a leadership decision to systematically apply teaching methods known for decades in a mix with new inventions applied in an international context may bring about innovation needed for modernisation while fulfilling the basic promise of a quality university to educate the global citizen. This paper outlines how looking for an international identity demands of HEIs dynamic modernisation, adapting to change and continuously raising the quality of education, research and science. Necessarily, it explores how HEIs navigate through the maze of governance, management and financing issues now facing higher education to raise the quality of education and links internationalisation of the curriculum with HEI modernisation.

1. Innovation in quest for quality: Teaching & learning in the 21st century

When in late 19th century in the UK first automobiles begun sharing the road with horse-drawn carriages, the motor vehicle drivers had many obstacles to overcome. “The worst prejudice was embedded in England’s ‘red-flag law’, [...] which required a man to precede each motor vehicle on foot waving a red flag” [Schneider, 1971]. In Pennsylvania, US, the Farmer’s Anti-Automobile Association formulated a set of rules that included: “In case a horse is unwilling to pass an automobile on the road, the driver of the car must take the machine apart as

rapidly as possible and conceal the parts in the bushes” [Anon, 1911]. In these difficult conditions car drivers continued to drive to the outrage and fear of many. In the end, obviously, automobiles became a permanent fixture on the roads of the world with horse-drawn carriages becoming extinct.

Internationalisation of higher education has been following the same path. Around for the past 25-30 years and very much an oddity at the beginning, it has now entered the mainstream of thinking about higher education that matters [Brandenburg, de Wit, 2011]. In the West, that is.

The authors argue that a leadership decision to systematically apply teaching methods known for decades in a mix with new inventions, applied in an international context, may bring about innovation needed for modernisation provide quality to teaching and learning demanded by the 21st century. In this paper the authors outline how looking for an international identity demands of higher education institutions (HEIs) dynamic modernization, adapting to change and continuously raising the quality of education, research and science. The authors focus on Central and Eastern Europe (CEE) as the region is now beginning to strategically internationalise its higher education, which can be gleaned from governmental attempts to create internationalisation strategies, an increasing presence of regional HEIs at international education events and a growing number of international students and international partnerships, which crowns the efforts of individual HEIs. We will explain the concept of internationalisation in the West and in the CEE, by sketching the background, drawing on historical and cultural circumstances of the region and outline major shift in higher education in the past 25 years. Next, we will focus on institutional changes across the higher education sector to explore how HEIs navigate through the maze of governance, management and financing issues while internationalising and searching for quality. In the final part we will explore various teaching methods, old and new, to link internationalisation to changes in the curriculum and the process of raising quality.

In the West, understood for the purposes of this paper as Western Europe, UK, Australia and the USA, societies have historically experienced considerably more mobility of students and workers than CEE had a chance to enjoy in the period of 1945-1989. “Internationalization at the national, sector, and institutional levels is defined as the process of integrating an international, intercultural, or global dimension into the purpose, functions or delivery of postsecondary education” [Knight, 2003]. We can also adopt J. Hudzik’s [2011] comprehensive internationalisation definition which understands it as “a commitment through action, to infuse international and comparative perspectives throughout the teaching, research and service mission of higher education”. Finally, one can acknowledge great emphasis H. de Wit, J. Knight and B. Leask place on *interna-*

tionalisation of the curriculum [Knight & de Wit, 1995; Leask, 2005], which constitutes the core of this paper. “An internationalised curriculum may have several recognisable components: global perspectives; intercultural communication; and socially responsible citizenship. The emphasis placed on these components will reflect how the institution, the discipline and the teaching staff conceptualise internationalisation” [Clifford, 2013].

Central and Eastern European higher education institutions have been opening up to the international environment in the last 10 years, but structural change comes slow. National internationalisation strategies in the region do not carry the political power as do their counterparts in the West. In CEE internationalisation is still, for the most part, a new phenomenon. It demands a clearer vision and strategic thinking on the part of HEI leadership, as well as readiness to critically measure its progress while ensuring appropriate financial support. In CEE the definition of the phenomenon is largely truncated, as it is in the case of Poland. There “internationalisation is understood mainly as short-term student mobility from the European Union into Poland and international recruitment for full cycle studies from non-EU countries. Internationalisation is sometimes seen as international partnerships or joint projects. It is almost never perceived as applying an international perspective in taught subjects and research or intercultural communication on campus through processes of *internationalisation at home*”, which includes internationalisation of the curriculum [Gieżyńska, 2015].

But what is Central and Eastern Europe? It comprises of 19 countries, excluding Russia and Turkey but including Ukraine (these inclusions and exclusions are often conflicting – as some include Russia in Europe or Greece as belonging to Western Europe [Wolff, 1994]. In this paper the authors make their own definition of CEE and include South-Eastern Europe, leaving out Ukraine, Belarus and Russia while using the former Soviet influence as a defining factor. These definitions aside, the region is extremely diverse: politically, economically, socially, culturally, ethnically, and linguistically. During the Cold War the Soviets attempted to dominate this vast and diverse region, and certainly controlled many aspects of life there, including higher education. This control meant following a higher education curriculum in line with Marxist-Leninist ideology, ideology-driven staffing (many professors had died in WWII prior to the Soviet control, such as during the Nazi AB-Aktion; remaining staff with non-communist thinking were removed), allowing qualification accreditation only with other Socialist countries, and ensuring strict hierarchy depending on the communist party directives. The region was freed from this control over 25 years ago just when the West was consciously beginning to talk about *international education* and then about *internationalisation*.

Today CEE still struggles with the post-communist legacy: outdated structures of governance, management models and financing schemes, as well as mentality which rejects change. The region has undergone several waves of higher education reforms to address these issues, but changing the teaching in higher education has been largely left to its own course. Some of the reforms (for example Poland in 2011, Hungary in 2012, Lithuania in 2009) assumed the trial-and-error approach, which was often caused by a politicised social pressure. The main reform objective was to change the system to fit with non-communist reality and narrow the distance to the West, often through the participation in European processes such as the Bologna process. Governments searched (and still do) for the most fitting model of higher education and its financing. The adjustments included attempts to introduce, at least partial, student fees (such as in Hungary in 2012) or were meant to alter the higher education financing model (such as migration to performance-based model in Poland, Lithuania and the Czech Republic, among others). Importantly, in each case in the Central and Eastern European region the new post-communist law allowed private higher education and the number of private HEIs began to grow. This fact is significant because it shows that the higher education sector responded to the market which in turn had great consequences felt today. For example, Poland experienced the so called *massification* of higher education [Kwiek, 2012] and currently has 438 HEIs (70% of which are private), serving approximately 1.55 million students[GUS, 2014].

On one hand, the vast majority of non-public HEIs in the region struggle with issues of quality and supervisory bodies labour at quality assurance. On the other hand, those private HEIs, which truly are interested in providing quality higher learning (rather than being diploma mills) understand the contemporary buyer's market and sustain themselves without public funding. Not burdened by the public budgetary constraints, private HEIs have a chance to operate as their leadership guides them. They employ more business-like solutions and operate as if they always were in a financial crisis. They reach out for internationalisation as a way to improve their standing in rankings and respond fairly quickly to the market demand with programmes with sought-after content.

For most of the CEE countries, contemporary internationalisation started with student mobility. For example, in Poland the Erasmus Programme started "in the 1998/99 academic year, that is 5 years before Poland entered the EU, but mobility of students, academic staff and scientific thought has been present much longer. In post WWII Poland international exposure of students, faculty and the entire higher education sector was severely curbed by Communist regime restrictions. International contacts were limited to interactions with HEIs within

the Soviet Bloc” [Gieżyńska, 2015]. The situation was similar in rest of CEE, while only a few entities provided a window to the outside of the Soviet empire: the Fulbright Commission, British Council or DAAD [Gieżyńska, 2015]. Arguably, the Erasmus programme has had the most significant impact not just on student and staff mobility in the region but on the internationalisation of higher education institutions and the modernisation thereof.

Internationalisation becomes increasingly important to the individual HEI as it often constitutes a symbol of embracing progress, modern approach to educating and openness to the world. The challenges lie in adjusting the HEI leadership and management to raise its quality in the competitive environment on the global education market. Adjustments require strong guidance from leadership who must know why they want their institution on the international market, skilful management fulfilling the clear vision of leadership, as well as a strategic approach to organisational change, sometimes unwelcome by the academic community. Internationalisation also requires constant progress checking to make sure that the chosen path remains optimal.

The above-mentioned changes occur on the institutional level across the higher education sector on constant basis at varying degree. HEIs struggle with their own governance, management and financing issues while having to, in order to survive in the times of a demographic low and diminished public funding, assess the quality of their education and science. The search for quality optimally starts with a thorough analysis of the current situation at a HEI and a critical look at its own modernisation needs and capacities. One of the areas that desperately needs repairing is the financial management model which often blocks their growth. The repairs must start from within because, as anecdotal evidence suggests, employees at universities are not aware of costs of running education programmes: cost of lecturers/employee time, rent of rooms and equipment, agent fees, etc. This ignorance does not necessarily stem from their own disinterest, but rather from the secretive way in which universities are ran. When internationalisation comes into play, high costs of international programme delivery and international student care force HEIs to adjust. Thus, changes in funding availability, the introduction of the performance-based funding and forces brought in by the internationalisation process are not necessarily negative as they may entice creative thinking and progress.

As mentioned earlier, private and public HEIs differ in the approach on the subject. CEE public universities, of often outdated character, still enjoy much political power. They seem unmovable as dissolving them is seen as a political act (rather than simply following a performance-based evaluation). Governments (with one notable exception) exhibit no political will to take unpopular measures

and close down mediocre universities. In 2014, the Hungarian government imposed chancellors as heads of administration positioned at the very top of the university – above the rectors. The situation is tense: universities feel their autonomy has been violated, the traditional hierarchy has been uprooted and because the chancellors search for efficiency without regard for the specific long-lived nature of HEIs – a nature which is very far from a business environment. While the assumptions behind this plan seem reasonable, the implementation leaves much to be desired as it stipulates that business-like management would solve all problems universities experience.

Adding internationalisation to the picture complicates matters. Internationalisation is often seen as a threat because opening up to the world can forever change the power structure and privileges at universities resistant to change. Although Hungary experiences changes in a particularly difficult manner, other CEE countries live through a transformation as well. HEIs which welcome the change must carefully think how to practically engage internationalisation so that it helps in creating modern didactic and research institutions while being financially viable. This last condition presents a serious problem because the public/outside funding is decreasing across CEE and HEIs must work hard to sustain their core activities. In the past, universities worried only about getting as many students as possible regardless of the quality of the student because the funding was related to input (number of students) rather than output (how many graduate). The performance-based model was recently introduced in Poland (2015), the Czech Republic (between 2011 and 2015) and Lithuania (2011) – and not without protests from the academic community. In this model HEIs have to demonstrate the outcomes of their education and the product of their scientific thought (publications and patents, commercialisation of the research results). Quality of research was always regarded as more important than caring for the quality of teaching, but this trend is slowly changing. Now HEIs will have to professionally assess their strengths and weaknesses and raise quality of their teaching and service in the process. In a situation where HEIs suffer from inappropriate financial management and are still learning to be responsive to changing demands of the domestic and international markets, strategic internationalisation of the curriculum implemented skilfully might spur a positive change.

Internationalisation influences teaching and learning as it demands a modern curriculum which would support 21st century skills of a global citizen. It is crucial to define what kind of graduate the institution of higher learning wants to educate. The 21st century graduate is a person aware of global challenges which include, but are not limited to “food security, climate change, water management, intercultural dialogue, renewable energy and public health” [UNESCO,

2009]. It is a person of global citizenship which combines “ways of thinking and living within multiple cross-cutting communities – cities, regions, states, nations, and international collectives” [Schattle, 2007]. Teaching methods and learning processes need to be internationalised to be of value to the global citizen. Concurrently, understanding of learning abilities and models of learning of the contemporary student, as well as the use of newest teaching methods, leads to modernisation of higher education from within.

In a situation of fierce global competition increased interdependencies between countries and their centres of knowledge demand of HEIs to deliver according to the expectations of the stakeholders: students, scientific community, financial donors, society at large and the economy. Moreover, the stakeholders are increasingly exposed to international trends which further heighten these expectations. An innovative approach may help in reaching these complex goals. Should HEI leadership decide to systematically apply teaching methods known for decades in a mix with new inventions, such approach would be innovative. Of course, teachers, lecturers and professors of quality constantly learn about new methods and polish the set of their favourite teaching tools in a “bottom-up” approach which stipulates teaching staff engagement. HEIs which strive for quality make training available to their staff and encourage using such training for increased qualifications, improved learning outcomes of the students, to raise their ability to do research at various education levels, which in turns translates into heightened quality of the entire institution. This path is obvious and HEIs who care follow it.

A purposeful decision to find innovation might make this path shorter, especially if HEIs embraced the performance-based funding model and listened to the voice of their students. HEIs teach for both the labour market by strengthening the currently most-demanded skills and the enhancement of humanity by building the skills of new scientists and entrepreneurs, politicians, visionaries. In most of the Western countries it is obvious that HEIs respond to job market requirements with programmes built with business/industry constraints or possibilities in mind, they carefully look into programme funding provided by employers and they consider sponsoring by industry. They do so because their government is interested in making a clear link between higher education and economic development and is interested to find out what the today’s skills are. For example, the government of Australia has recently issued a document on the preferred skills for employment in the context of internationalisation of higher education [Australian Government, 2015], in the UK the Department for Business, Innovation and Skills looks at the paths of performance by recent graduates through mandatory surveys HEIs must deliver to their graduates.

CEE is beginning to follow these steps less because of government guidance and more so due to its own sense of social responsibility. For example, in Poland University of Łódź has signed an agreement with a business consulting firm and a bank [PAP 2015], Kozminski Academy created a new programme with City Bank preparing students to work in The International Banking AML Track [Kozminski University, 2014], in the Czech Republic Skoda Auto University was founded by a car producer [www1], and in Estonia representatives of the business sector will be involved in the design of curricula in the newly created Technology College at Tartu. Even though these examples are already numerous, excellence in teaching is an objective addressed much less often than excellence in research, where the perception of international competition is perhaps more acute. Internationalising the curriculum brings the methods used for decades with the new ones to produce an exciting learning environment – and outcome.

Interdisciplinary approach first appeared in the *Education Index* in January 1955, yet the term was not clearly defined. However, the idea that it was a new term for an old concept persisted. D. McCuskey [McCuskey, Conowey, 1955] writes that with the increase of “stores of knowledge” increased the need for specialisation of research. However, this increased specialisation seemed to create divide between overlapping bodies of knowledge. “There appear to be two main areas in which interdisciplinary cooperation is of the most value [...]. Those two areas correspond roughly to the two poles from which we attempt to derive our curricula, the needs of the learner and the needs of the society”. While Western universities allow students to take courses from variety of disciplines, interdisciplinary studies are fairly new in CEE and only special, more promising students are allowed to follow the path. (In Poland, the first programme that allowed students to study in several fields simultaneously was established at Warsaw University in 1993. Currently there are only ten such programmes in Poland and this number is extremely low considering the large number of HEIs there). Moreover, adding international dimension to an interdisciplinary approach to any subject deepens its understanding to reflect the complexities of today’s interconnected world.

Soft skills development is increasingly on the agenda of governments (for example, the Lithuanian government has begun working closely on the relationship between soft skills and the employability of graduates) [Vaitkus, 2015]. As a concept in human development and education, soft skills are not a recent invention. In 2002, Partnership for 21st Century Learning was established to foster cooperation between US government, business community and education leaders to introduce “21st century skills” to all students [P21, s.a.]. One of the key concepts is to foster Learning and Innovation Skills (*Four C’s* – creativity, critical

thinking, communication and collaboration). We believe that 4Cs should be integrated into the education system much earlier than at the higher education level to reach its full potential yet it is commendable that both the authorities and HEIs begin to include soft skills in the curriculum.

Finally, methods used around the world to cater to individual needs of students include module and distance learning. We think that this need stems from the increasing desire and ability of students to be mobile. Students more and more search for knowledge online and in alternative sources of knowledge, treating universities as centres for deepened interaction with professors and other students. In the UK, for example, Open University successfully operates the module learning model offering students the possibility to study any and all topics offered. This concept started to become popular in extension education, offering courses designed to address specific needs of the extension students and allowed for individualisation instruction [Robinson, Crittenden, 1972]. In CEE, module learning is primarily used in vocational training, although in Poland, for example, the government has allotted structural funds to pilot-test module learning in higher education (Competency Development Programme – POWER; MNiSW 2014). Distance learning, now popular across the globe, has been used in Australia since 1951 to provide via radio access to education to children who had too far to school [Australian Government, 2007]. With time, distance learning and now virtual mobility allow higher education instruction and other training to those who do not wish to travel or for other reasons cannot do so. In his book, Bates [2005] defines “fully online” courses where students have access to a computer and the Internet and attend the course without face-to-face classes.

The successful marriage of e-learning and distance learning, supported by the ever-present Internet now become a new form of education. Because the technology is mobile, “students turn ‘nomad’, carrying conversations and thinking across campus spaces” [Alexander, 2004] and participate in great numbers (MOOCs). Herrington and Herrington [2007] argue that theoretical foundations of learning are moving away “from behavioural to cognitive to constructivist”. Mobile learning is not simply an extension of e-learning, it is fundamentally changing the way content is communicated and transmitted. New technologies change learning from fixed and located in learning spaces to nomadic, portable, ubiquitous and available. It “is not about ‘mobile’ [...] or about ‘learning’ [...], but part of a new mobile conception of society” [Traxler, 2007]. It forces the lecturers to adjust and take into account the international and intercultural aspects of learning.

Evolution of current tools and practices is not the only challenge facing educators, disruptive technologies and techniques are emerging. They are, to name a few: gamification – “the use of game design elements in non-game contexts” [Deterding et al., 2011]; flipped classroom – “an educational technique that consists of two parts: interactive group learning activities inside the classroom, and direct computer-based individual instruction outside the classroom” [Bishop & Verleger, 2013]; learning analytics; makerspace; Internet of Things that “refers to the networked interconnection of everyday objects, which are often equipped with ubiquitous intelligence” [Xia et al., 2012].

Conclusions

The famous proverbial Chinese curse is “May you live in interesting times” and today’s HEIs live in interesting times. The 21st century student is a digital native demanding instant gratification, incessantly mobile and expecting ROI on the costs associated with education embodied in good employment. She or he is not a number, but a client who votes with their feet. At the same time, the economy speeds in an attempt to please the new generation of clients, to curb the effects of global environmental changes and to catch up with the digital era. HEIs with outdated management styles truly have a difficult task. This paper argued that a leadership decision to systematically apply teaching methods known for decades in addition to new inventions applied in an international context bring innovation needed to modernise while fulfilling the basic promise of a quality university to educate the global citizen. However, making such decision viable is only possible when internationalisation is wholeheartedly embraced and supported with vision, wisdom and appropriate management. Internationalisation of the curriculum will strengthen the institution and help in its modernization if the methods chosen for the purpose are means and not an end to it. Furthermore, inclusion of modern technology is no longer an option; it is a necessity in order to attract digital native students during demographic low (in a buyer’s market). Just like other fundamental changes in higher education and university structure, internationalisation must be treated as a long-term commitment once the decision to proceed along this path has been made. Further research is needed to examine how CEE HEIs institute changes from within to increase quality, battle diminishing funding, and listen to student voice. In the meantime, the hope for innovative teaching for the 21st century lies in the hands of dedicated academic community who incessantly strive for the quality of their own teaching.

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Action learning in enhancing the student engagement

Katarzyna Rupik

Introduction

The term “engagement” has been used extensively in many social science disciplines including psychology, sociology, political science, organizational behaviour and management [Hollebeek, 2011]. There is a growing body of knowledge on the phenomenon of engagement in the literature. The notion of engagement has been addressed to various agents’ behaviors, as for example employee engagement or customer engagement [Brodie et al., 2011]. The volitional [Jennings, Stoker, 2004] and/or discretionary [Frank, Finnegan, & Taylor, 2004] interpretations of the engagement have emerged in the literature, addressing the notion of “connection”, “attachment”, “emotional involvement” and “participation” to describe specific engagement forms [London, Downey, & Mace, 2007; Brodie et al., 2011]. The concept of student engagement has been intensively explored in educational psychology. Student engagement is defined as students’ involvement in activities and conditions that are linked with high-quality learning. A key assumption is that learning outcomes are influenced by how an individual participates in educationally purposeful activities. While students are seen to be responsible for constructing their own knowledge, learning is also seen to depend on institutions and staff generating conditions that stimulate student involvement [Kuh, 2001].

As stated by Bryson [2014], the student is positioned as active learner, not as consumer of a product such as acquiring a qualification. This view is in line with the rules introduced in the European Qualifications Framework (EQF) which constitute modern trends in the higher education in European Union. It encourages countries to relate their national qualifications systems to the EQF so that all new qualifications issued from 2012 carry a reference to an appropriate EQF level [European Commission, 2012]. Agreed upon by the European institutions in 2008, the EQF is being put in practice across Europe, including Poland. National Qualifications Framework (NQF) in Poland emphasises, among others, the new role of a lecturer (academic), who becomes rather a leader supporting students’ learning processes than just a presenter of information [Chmielecka, ed.,

2010]. This idea seems to be derived from action learning concept, introduced by Reg Revans in the 1940s. Although there have been multiple variations of the action learning concept, all forms of action learning share the elements of real people resolving and taking action on real problems in real time and learning while doing so [Marquardt, 2011]. And one of the key component of the action learning is an action learning coach whose role resembles a lecturer, who according to NQF, supports students' learning process.

Considering the essence of student engagement and action learning, one may conclude that action learning leads to student involvement and participation in activities and conditions that are linked with high-quality learning. In other words, action learning leads to student engagement and thus is an effective tool of SE enhancement in management pedagogy. Although there is much evidence on action learning effectiveness in management pedagogy, the relationship between action learning and student engagement has been rarely explored in the literature. As stated by Shah and Janardhanan [2012] various pedagogical techniques as active learning, problem-based learning, project-oriented learning, experiential learning are effective in achieving the balance between theoretical and practical knowledge in management pedagogy. Action learning and experiential learning close the gap between academic experiences and real-world requirements [Rae & Wang, eds., 2015]. Action learning methods are then useful in learning management which is, according to Henry Mintzberg, "a practice where art, science and craft meet". Mintzberg also claims that: „Managing is a natural practice that cannot be reproduced in the classroom – you need experience to appreciate it. No simulation, no HBS case study can replicate the experience, can communicate the complexity – or rather the intricacy – of managing” [Allio, 2011]. The effectiveness of action learning method in management pedagogy is then indisputable. On the other hand, the evidence on effectiveness of action learning in enhancing the student engagement in management education is still insufficient. However there are some achievements in this area in engineering pedagogy, where student activity and engagement in the learning process are the core elements of active learning [Prince, 2004].

The paper is organised as follows. First, the conceptual framework including the review of literature on student engagement stimulation and action learning principles is briefly discussed. The paper continues by outlining the methodological approach for the empirical research and discussing the findings and future research propositions. The subsequent section includes final conclusions.

1. Conceptual framework

1.1. Student engagement stimulation

Student engagement (SE) is defined as students' involvement in activities and conditions that are linked with high-quality learning. A key assumption is that learning outcomes are influenced by how an individual participates in educationally purposeful activities. While students are seen to be responsible for constructing their own knowledge, learning is also seen to depend on institutions and staff generating conditions that stimulate student involvement [Kuh, 2001]. According to Coates [2006] the concept of student engagement is based on the constructivist assumption that learning is influenced by how an individual participates in educationally purposeful activities. Learning is seen as a "joint proposition", however, which also depends on institutions and staff providing students with the conditions, opportunities and expectations to become involved. However, individual learners are ultimately the agents in discussions of engagement. Bryson [2014] argues that student engagement is about what a student brings to higher education in terms of goals, aspirations, values and beliefs and how these are shaped and mediated by their experience whilst a student. SE is constructed and reconstructed through the lenses of the perceptions and identities held by students and the meaning and sense a student makes of their experiences and interactions.

Therefore, student engagement has two dimensions: it is about what both students and higher education institutions (HEIs) do. According to Bryson [2014] two distinct spheres of SE should be distinguished: "Student engaging" and "Engaging students". This argument highlights the dual character of SE phenomenon which is associated with two types of actors participating in SE process: students and HEIs.

Concerning student as an actor of SE process, individual and collective engagement should be recognised. Individual engagement refers to what an individual student do with their own learning. Collective engagement refers to collective role of students and their opportunities to influence the broader student experience. Collective engagement may occur through representation and involvement in governance and decision making gaining student feedback, via questionnaires or student representation on committees, as part of the individual university's quality assurance framework [Bryson, 2014]. Healey, Mason O'Conner & Broadfoot [2010] proposed three distinct levels of collective SE:

- Micro: engagement with their own learning and that of other students.
- Meso: engagement in quality assurance and enhancement processes.
- Macro: engagement in strategy development.

In this paper we focus on individual and collective student engagement (at its micro level). We can note that student involvement and empowerment can create opportunities to foster student engagement both in those who take such opportunities up, and in the impact that these students and their work has on other students. Besides, in this paper we concentrate on HEIs activities in enhancing student engagement, so we focus on one of SE sphere: engaging students. Engaging students is about what the staff of HEIs and other parties offer in creating opportunities for students to engage in educationally purposeful ways.

Many researchers in student engagement field emphasise active and collaborative learning to encourage student engagement. Chickering and Gamson [1987] suggest seven principles to be adopted by HEIs' staff to shape the whole experience of students in classroom and beyond. These are: ensure student-staff contact; promote active learning; develop cooperation and mutuality between students; emphasise time on task; give prompt feedback; communicate high expectations; respect diversity in talent and ways of learning [Bryson, 2014]. According to Kuh [2001], there are key components which encourage student engagement:

- Level of academic challenge: extent to which expectations and assessments challenged students to learn.
- Enriching educational experiences: participating in broadening educational activities.
- Active and collaborative learning: students' efforts to actively construct their knowledge.
- Supportive campus environment: feeling of being legitimatised within the community.
- Student-faculty interaction: level and nature of students' contact with teaching staff.

There are also ten principles of engaging students identified in the literature (see Table 1).

Table 1. Principles of engaging students in HEIs

No.	Principle
1	2
1	Foster students' willingness and readiness to engage by enhancing their self-belief
2	Embrace the point that students have diverse backgrounds, expectations, values, orientations and aspirations, thus different "ways of being a student", and to welcome, respect and accommodate all of these in an inclusive way
3	Enable and facilitate trust relationships (between staff and students, and students and students) in order to develop a discourse with each and all students and to show solidarity with them
4	Create opportunities for learning (in its broadest sense) communities, so that students can develop a sense of competence and belonging within these communities
5	Teach in ways to make learning participatory, dialogic, collaborative, authentic, active and critical
6	Foster autonomy and creativity, and offer choice and opportunities for growth and enriching experiences in a low risk and safe setting

Table 1 cont.

1	2
7	Recognise the impact on learning of non-institutional influences and value positive influences and accommodate or mitigate negative influences
8	Design and implement assessment for learning with the aim to enable students to develop their ability to evaluate critically the quality and impact of their own work
9	Work in partnership with students at every opportunity by seeking to negotiate and reach a mutual consensus with students on managing workload, challenge, curriculum and assessment for their educational enrichment, without diluting high expectations and educational attainment, by developing mechanisms for all students to democratically participate in all aspects of the university that impacts directly or indirectly on them
10	Enable students to become active citizens and develop their social and cultural capital

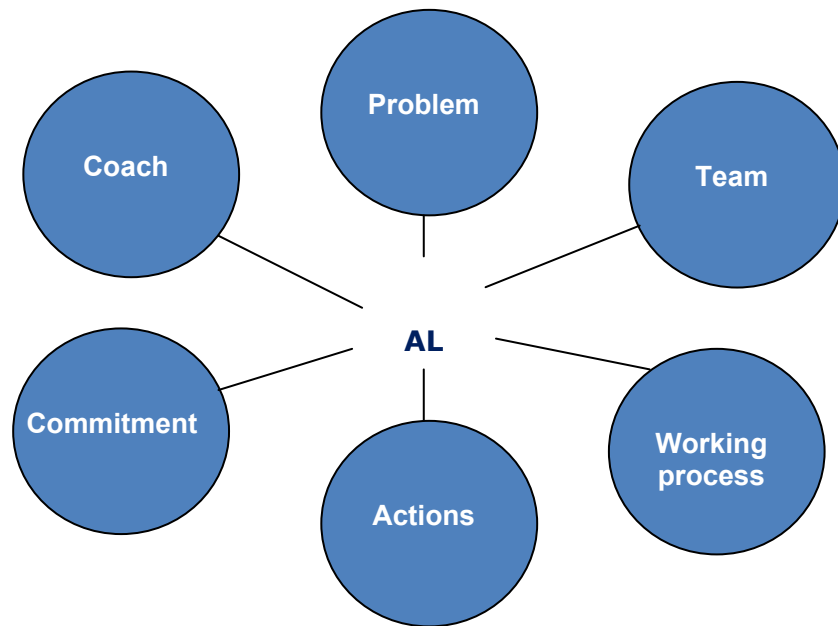
Source: Based on: [Bryson, Hand, 2008; Chickering, Gamson, 1987; Krause, 2005; Mann, 2001; Zepke, Leach, 2010, after: Bryson, 2014].

1.2. Action learning principles

The principles of engaging students by HEIs refer to enhancing students' involvement and participation in high quality learning, so they may serve as a framework for the strategy of enhancing SE. It may be noticed that among those principles the action learning components maintain the key strategy in engaging students and thus enhance student engagement. Indeed, adopting the action learning rules in HEIs may increase student involvement and empowerment. Action learning (AL) is a process that involves a small group working on real problems, taking actions, and learning as individuals, and as a team. The attraction of action learning idea is its power to simultaneously solve difficult challenges and develop people and organisations at minimal costs to the institution. Surveys by the American Society for Training and Development indicate that two-thirds of executive leadership programs in the United States use action learning [Marquardt, 2011].

Yeo and Marquardt [2010] hold the view that action learning share some features with experiential learning. Experiential learning introduced by D. Kolb in the 1970's and 1980's involves knowledge acquisition through the grasping and transformation of experience within which individuals engage in observation, reflection, conceptualization, and experimentation [Kolb, 1984]. In experiential learning through trial and error individuals internalise the lessons learned and develop adaptive strategies for further actions [Miettinenn 2000; Yeo and Marquardt 2010]. Both action and experiential learning processes emphasise the importance of exploring and exploiting frames of references to formulate and modify action patterns and involve "learning by doing" with questioning as a precursor to developing appropriate action [Yeo, Marquardt 2010]. Action learning has six components (see Figure 1).

Figure 1. Action learning components



Source: [Marquardt, 2011].

Marquardt [2011] describes those AL components as follows:

- **Problem:** AL centers on a problem, project, challenge, opportunity, issue, or task, the resolution of which is of high importance to an individual, team, and/or organisation. The problem should be significant and urgent and should be the responsibility of the team to solve. It should also provide an opportunity for the group to generate learning opportunities, to build knowledge, and to develop individual, team, and organisational skills.
- **Team:** The core entity in AL is the action learning group. The group is ideally composed of four to eight individuals who examine an organisational problem that has no easily identifiable solution. Group members may be volunteers or be appointed, may be from various functions and departments, also from other organisations, may involve suppliers and customers. Ideally, the group should have members with diversity of background and experience so as to acquire various perspectives and to encourage fresh viewpoints.
- **Working process:** AL emphasises insightful questioning and reflective listening. By focusing on the right questions rather than the right answers, AL group members become aware of what they do not know as well what they do know. Questioning build group cohesiveness, generate innovative and systems thinking, and enhance learning results. Insightful questions enable a group to first clarify the exact nature of the problem before jumping to solutions.

- **Actions:** AL requires that the group be able to take action on the problem it is working on. Members of the AL group must have the power to take action themselves or be assured that their recommendations will be implemented. If the group only makes recommendations, it loses its energy, creativity and commitment. There is no meaningful or practical learning until action is taken and reflected on, for one is never sure an idea or plan will be effective until it has been implemented.
- **Commitment:** Unless the group learns, it may not be able to creatively solve a complex problem. And although solving an organisational problem provides immediate, short-term benefits to the company, the greater, longer-term, multiplier benefits are the long-term learnings gained by each group member and the group as a whole, as well as how those learnings are applied on a system-wide basis throughout the organisation. Thus, AL may have greater strategic value for the organisation than what is gained by the immediate tactical advantage of solving the immediate problem.
- **Coach:** The AL coach helps the team members reflect on both what they are learning and how they are solving problems. Through selective interventions and insightful questions, the coach enables group members to improve their performance and develop their leadership skills. The coach helps the group to reflect on how they listen, how they may have reframed the problem, how they give each other feedback, how they are planning and working, and what assumptions may be shaping their beliefs and actions.

Marquardt and Waddill [2004] notice that action learning has been used for numerous purposes including strategic development, knowledge management, organisational development, human resources, executive coaching and team dynamics. Also practitioners and theorists from diverse disciplines such as management science, psychology, sociology, engineering, political science, sociology, anthropology, political science, and higher education embrace its practical effectiveness.

2. Action learning at the University of Economics in Katowice (UEK)

2.1. Research methodology

To discover the potential of action learning in enhancing student engagement in management learning, the author conducted an experiment among students of the final year of the undergraduate studies. The experiment was conducted between November 2014 and January 2014 among the students attending the classes “Economics and organisation of gastronomy”, the subject in programme

structure of Tourist Economy offered by the Faculty of Management at the University of Economics in Katowice, Poland. Five individuals volunteered to participate in the student consultancy project while the rest of the group (20 students) attended standard classes. Below the research assumptions for selecting the subjects and particular action learning method (i.e. student consultancy project) for this experiment are discussed.

As proposed in our previous work, action learning methods should be applied in a certain moment of student development, at the final semesters, when students already possess adequate theoretical background [Rupik, Żyminkowski & Januszewski, 2013]. This view is in line with the concept of the student lifecycle model (SLM), which is a framework used to describe the journey of students at university and it is made up of a number of stages that occur in a specific order [Morgan, 2012]. SLM can be applied to undergraduate (UG) and postgraduate (PG) students and it is used by many institutions and practitioners in developing initiatives to improve and enhance the student experience. According to Morgan, the SLM framework allows institutions to understand the desired outcomes and deliver a high-quality and holistic experience by supporting students through every stage of their academic and personal journey at university and by identifying the key services students need to succeed at university. The basic model of student lifecycle consists of six stages: Raising aspirations, Pre-entry activities, Admission, First term/semester, Moving through the course and Employment [Morgan, 2012]. However, in our experiment, we drew on the augmented student lifecycle model by Morgan [2008], called “Student Experience Practitioner Model”. It also consists of six stages (First contact and admissions, Pre-arrival, Arrival and orientation, Induction to study, Reorientation and reinduction, and Outduction) but it emphasises the student experience and more accurately describes the position of the student in their academic study. In our research we refer to the last but not least stage of student lifecycle which is described as “outduction”. This stage, as stated by Morgan, is a much neglected area of support in the SLM and research is limited. It is about supporting students in the transition from the world of study into the world of life. The challenge is to develop processes and initiatives that support students in preparation for leaving their studies and in deciding what to do next. The students’ questions to answer at this stage include among others: How can skills learnt at university be transferred to life post-study? What if I do not get the qualifications I expected?

The experiment was then positioned at the last stage of the SLM and student consultancy project (SCP) was applied as the action learning method [Ardley, Taylor, 2010]. In this method, the small team of students (4-8) carry out the research and deliver consultancy „outside the classroom” on a business challeng-

ing issue identified by the project client to produce clear, practical recommendations. A coach – academic supervisor – is responsible for action learning working process. The projects are performed to various clients, mostly local SMEs. In each project a named representative of host company is available over the duration of the project and they advise and guide the students and evaluate the students' presentation and recommendations. The challenging problem to solve by the students in our SCP experiment was: How to attract new customers for local restaurant. Project consisted of several tasks, including, among others, marketing audit (for instance mystery shopping, workshop with the restaurant owner and manager), marketing research, preparing and discussing reports for the client (including the final report). Approximately 75% of recommendations was accepted by the client and students were also willing to help voluntary in implementation phase of the project.

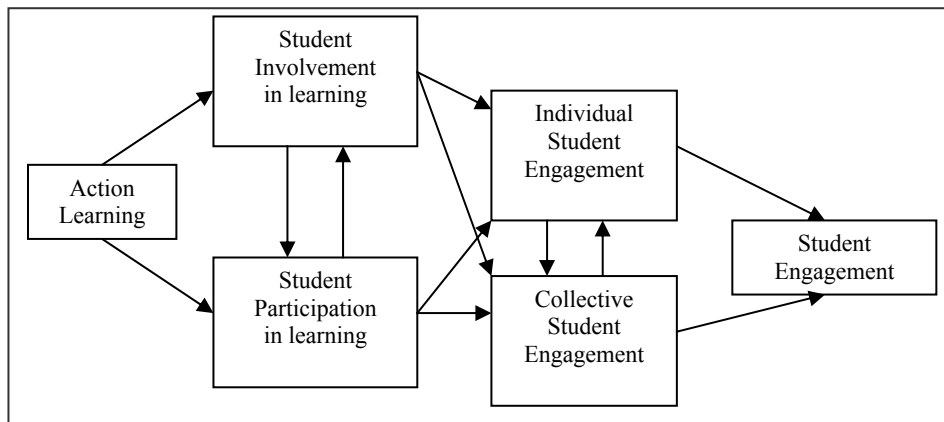
2.2. Research findings and discussion

As mentioned previously, five students were selected to participate in the student consultancy project while the rest of the group (20 students) attended standard classes. Using the participative observation, the following results of the SCP were identified among the project team:

1. Students' willingness and readiness to engage by enhancing their self-belief was fostered during the project, students were willing to help voluntary in restaurant development since they discovered that the client company's resources are limited.
2. Students developed a sense of competence and belonging within the local community (including the project group interrelations, interactions with the local restaurant and its staff, and the representatives of the local environment and representatives of neighbouring firms (prospective customers for the restaurant).
3. Students' learning in this SCP was participatory, dialogic, collaborative, authentic, and active. They engaged in various additional activities (not planned previously) to reduce the knowledge limitations, they cooperated within the team and beyond.
4. Students' autonomy and creativity was fostered, they were offered choice and opportunities for growth and enriching experiences, but were aware that they work in a low risk and safe setting with coach assistance.
5. Students were enabled to develop their ability to evaluate critically the quality and impact of their own work while discussing their activities and recommendations with the client representative and with coach, and within the project team.

The increase of involvement and participation in learning observed in the project team has not occurred among the students who attended standard classes. Aforementioned learning outcomes among SCP team refer to the principles of stimulating the student engagement. Therefore the research findings suggest, that the student consultancy project experiment encouraged student engagement through increasing their involvement and participation in learning management by doing in the real business settings. The project stimulated both individual and collective student engagement at the micro level (engagement with their own learning and that of other students). The findings of the experiment enabled us to propose the framework for the future research exploring the relationship between action learning methods and student engagement components (see Figure 2).

Figure 2. Action learning in enhancing student engagement – proposed research framework



Considering the benefits of action learning at the outduction stage of the student lifecycle, two groups of outcomes may be distinguished, depending on the perspective (student and client – potential employer for the student). Through action learning as student consultancy projects, students practice management and gain experiences in real business settings. They learn team work and creativity. They also may apply their knowledge (theory) to practice and then critically evaluate what they do not know and what they know. Client’s benefits include access to creative ideas and expert consultancy without the costs, obtaining help in doing business, and test drive future talent.

Conclusions

In this paper two separate but complementary concepts from different disciplines were combined: action learning (from management pedagogy) and student engagement (from student psychology). Research findings revealed that action learning method applied in teaching and learning management through student

consultancy project enhances student engagement. The significance of further exploring the relationships between those two constructs was then established and the framework for future research was offered by the author. Furthermore, the action learning method of the student consultancy project was confirmed to be an effective tool at the last stage of the student lifecycle (i.e. outduction stage). This is due to dual benefits it delivers to student and potential employers.

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Innovation beyond the cell phone: How principals utilise the use of technology in schools

Mohammed Saleh Banihani

Introduction

This study investigates challenges encountered by school principals in the process of infusing technology into their schools. The study was carried out in Irbid, Jordan. Data collection was made using face to face in-depth interviews. A sample of 16 participants was purposefully selected from 6 schools in Irbid. Sixteen interviews were carried out in which 6 were with principals and 10 with teachers reflecting on how schools leadership promotes technology. Interviews were transcribed and analysed using the grounded theory; checking for emerging and repetitive themes. The study revealed that the use of technology in schools is limited. Although there is a great attempt by schools to adapt to new modes of thinking about technology, yet they are faced with many logistics and have to compete with the students engaging in the social media. There have been, however, major steps toward using technology and innovation, including computers in the classroom.

1. Theoretical background

Innovation of the educational system in Jordan has been the ambition of the Jordanian government for the past 25 years. Particularly, great attention has been given to reform programs that infuse technology into schools. This study aims at understanding the challenges faced by school principals in the process of infusing technology to schools. Children, and schools, who do not use technology, will be highly disadvantaged. Technology is expected to be well utilised at Jordanian schools. Unfortunately, this is not the case, as was observed by the researcher. This study investigates the difficulties in which schools encounter in making the best use of technology.

Computers' availability in schools is a major part of implementing this concept. It is rather a major paradigm shift in moving from the old ways of doing things to a new mode of thinking; replacing the old methods of teaching, learning and communicating in schools with up to date technology. Students, on their own,

however, are a head of the game; they are heavily hooked on their cell phones. Students fight with schools for bringing their phones to classes, they message friends, serve the internet, watch movies, and even exchange school notes with their friends. Schools, on the other hand, are still struggling with finding resources and convincing staff to adapt to the new realities.

Jordan, the context of this study, has made major strides in Education. Students' enrollment rate is 89% and 82% at the primary and secondary level. Furthermore, literacy rate among 14-25 years old is 98.9%. Public and private universities are available and steadily increasing in numbers. The first university in Jordan was established in 1962, the University of Jordan, and the second university was established in 1962, the Yarmouk University. At the moment there are over 26 institutes of higher education in Jordan. Public basic education is compulsory and free, although, over third of Jordanian children attend private schools [Banihani, Abu-Ashour, 2014]. Jordan is ranked 77 on the Human Development Index (HDI) for 2012, an average growth of 0.43 from 2000-2013 [United Nations Development Program, 2014]; and it was ranked 80 in using the internet.

Integrating technology to schools as an educational reform is best explained by theories of change or by theories of education and development. Mainly, two theories of development are highly prevalent. One is the human capital theory, which claims that development in any country resides within the country itself in preparing and developing its human resources. In other words, development can be reached by efforts made inside the country as appose of bringing aids and solutions from the outside. The other prevalent theory is modernisation. It is by modernising institutions, individual's develop modern values and behaviour; the ability to cope with rapid social change, and eventually creating economic development [Fagerlind, Saha, 1998]. Given the simplicity inhibited in these two theories, we may infer that the use of technology at schools leads to developing human capital, as well as individuals develop modern values, then modern behavior and eventually to an improved and viable economy.

Another theoretical perspective for this paper is what called the "frog-leap" approach. Developing countries may strive for development without going through the formal hierarchy of moving from one stage to another. Instead, they may jump right to the digital age, no borders or hindrances. By emphasizing the use of technology and making it available to students, it helps them to connect with the rest of the world and frog-leap to the future.

Thus, infusing technology into schools is theoretically plausible. Infusing technology into schools helps to give students additional worthwhile skills that provide for them more opportunities and possibilities. Developing students' values to be

more adaptive to change will also lead to more life possibilities. Furthermore, when students emerged in using technology and adapt to it, they will be more receptive to the idea that making a difference is possible, the “I can do it” idea.

But, of course, technology has to be managed well and integrated to the overall system of education. Schools that have great system of teaching and learning may benefit the most of this phenomenon. Schools that are less prepared for teaching and learning may use technology to bridge the gap. Using technology to improve schools is a viable and dynamic approach.

The purpose of this study is to investigate the role of principals in promoting the use of technology in their schools. It is the effort made by principals and schools in providing innovative opportunities for students. Innovative thinking, to be sure, goes beyond the technological tools that schools may use. Students must make a paradigm shift in their mind for technology use; it is the belief that technology is instrumental in solving life problems and making change. Technology provides different kinds of knowledge than what teachers may provide. Furthermore, students do not have to rely on teachers to provide knowledge, but may look up any knowledge they need on Google [Gilbert, 2011]. It is important to think of the internet and technology in general as a solution that is always available to students.

In addition to this new mind set, electronic devices must be available in schools. These devices include computers, internet service, voice mail, videos, email, special TV networks and other advanced technological means [Abu Alnasur, 2009].

The importance of technology in educational management is realised by a study by Sellers [2005]. He found that technology plays a major role in decision making in educational organisations. Designing a strategic plan to utilise technology in decision making, for example, is crucial. To be sure, information is the corner stone for performing any duty at any organisation. Technology has made the task of organisations much easier and became the heart of any organisation. Educational institutions benefit the most of this remarkable development [Alami, Bayati, 2010].

On the role of principals in facilitating technology in schools, Schiller [2003] suggests that principals play a major role in integrating technology into schools, and they lead change in their schools. Furthermore, successful principals take initiatives in integrating technology into education and provide creative and beneficial environment for teachers and students.

Interest in integrating technology to schools is a worldwide phenomenon. It reflects the many advantages and opportunities presented by technology. Some of these benefits are easing and simplifying communication throughout the organi-

sation. Another benefit is reducing paperwork [Alsalmi, Alsuleity, 2008]. The importance of technology in teaching is a well-researched topic as was found in a study by McLeod & Richardson [2011]. They identified 25 well-referred to journals and found that they included 43 articles dealing with technological leadership; particularly dealing with integrating technology into the classroom, team building and policy related to technology.

Speaking for better use of technology in schools, US President Obama raised his concern about the existing gap in students competent in using computers in schools and out of schools. They are much better in using computers out of schools. He warned that such thing has to change and schools should make better use of technology [Ash, 2010].

This study aims at understanding the challenges faced by school principals in their process of integrating technology to schools. By understanding these challenges, suggestions could be made to help schools make a better use of the technological advantages available at the moment.

2. Study questions

The study poses the following three questions:

1. What are the challenges encountered by school principals in their integrating technology to their schools?
2. What are the technological devices available for schools in Jordan?
3. Do schools use websites? How effective are websites in communicating with the school community?

3. Methodology of research

The main object of this study is the understanding [Merriam, 2007] of the challenges and process in which schools face in integrating technology to schools. Data collection for this study was based on 16 personal semi-structured interviews with women principals and teachers; 6 interviews were made with principals and 10 interviews were made with school teachers. Interviews were recorded and transcribed with the exception of one in which the participant refused to be recorded. Participants were purposefully selected based on the researcher's convenient and the location of schools in Irbid, where the author lives and work. Nothing is particularly different about these schools in comparison with other girls' schools in the district.

The grounded theory was employed in analysing data [Weston et al., 2001]. After reading the interviews in details, I searched for common themes and patterns. Common themes were organized in main categories and sub categories. Then, the points that had things in common were connected together. Then results of the study were recorded in main and sub-main categories. Exerts from participants were included to illustrate the perspective of participants in their own words.

4. Results of research

Challenges Facing the Application of Technology

What are the problems exist in schools and impede the use of technology? The lack of resources in schools was the first element to be mentioned by participants. They suggested that schools do not have the resources to use, maintain and replace computers. The internet is still not available in many schools. The following are examples of what participants said:

- *Computers are old and no internet available.* (Rana, principal)
- *Teachers are not well qualified in computer use; and that make them less motivated for using the computers. This is one of the big obstacles in utilising technology.* (Anwar, teacher)
- *As a parent myself and a teacher, I do not think I have time to receive emails and respond to them. I'm overwhelmed, busy with work and home responsibilities.* (Khitam, teacher).

Technology Devices Used at Schools

This category surveys what devices are used at schools in an attempt to find out how prepared schools are for technology. Participants suggested that computers are somewhat available at schools, but their use is minimal. It is used mainly to report students' grades. In communicating with each other, principals and teachers are using phones. Smart boards are not available in schools. The following are examples of responses from participants:

- *I use computers the most, mainly for the internet.* (Rana, principal of high school)
- *I use computer very little, I mostly communicate with others by talking to them.* (Sameera, principal of high school)
- *We still do not use computers. The problem we do not have computers for each teacher, and they do not bring laptops with them. It is a little hard to rely on computers.* (Sajeda, principal).

Principals Use of Technology

This category is about the principal's use of the computer or any other electronic device. Participants suggested that principals hardly use the computers to communicate with them and communication still depending on paper work. Here is what some participants had to say:

- *There are no follow ups using computers. Principals still use paper work.* (Salwa, principal of high school),
- *Principals do not even use the email. The secretary of the school opens the email and brings it to the principal.* (Laila, teacher).
- *Some teachers look at principals who use computers as not being humble.* (Ameera, teacher).
- *Principals receive information and instructions by email from the department of education or any government agency, yet they response by writing delivered by mail. This is changing somewhat and many people using emails now.* (Ameera, teacher)
- *It is changing now and using the email in our communication with the district is very useful.* (Fatima, principal).
- *It is by now everything should be on the computer, but it is still way to go* (Maryam, teacher).
- *Probably in the year 2030 we will be depending on the computer to communicate messages.* (Layla, principal).
- *Many teachers and principals reject the electronic media and not comfortable with using the computer.* (Ameera, teacher).

Communication with Teachers

This category deals with means of communication between principals and teachers. How do principals communicate with teachers? Do principals use technology in their communication with teachers? The following are examples of participants responses:

- *Some teachers object being dependent on computers, especially older teachers. They think it takes too much time!* (Ameera, teacher)
- *It is not that I do not care about technology, but I like to talk to the principal face to face.* (Khitam, teacher)
- *I do not check my email on daily bases. I rather use the phone or face to face communication.* (Salwa, teacher).

Connecting with Parents

How do schools communicate with parents? Participants reflected on their methods of contacting parents. Obviously still use the phone or sending messages home with children. Here are some of the responses:

- *I send SMS to parents when there is a meeting and also I send an invitation on paper.* (Rana, principal)
- *I call parents for behaviour problems because it takes a lot of time to use emails and wait for a response.* (Tamam, teacher)
- *Anything related to children, I call parents; I do not use the email or messages in contacting them.* (Raneem, teacher).

Schools Electronic Sites

Assuming that a sign of technological development to have a website for each school. This site should inform all people attached to the school with information about the school and the achievement of children. Here are what some participant had to say:

- *We have a Website for the school but no one uses it.* (Rabiha, teacher)
- *We have many groups on the Facebook made by students.* (Raneem, teacher)
- *We have no website for our school.* (Ameera, teacher).

Conclusions

Schools still do not find it convenient to use technology. This study concentrated on the use of the computer and the internet to denote for technology use. Yet, technology involves many other aspects. Mainly, the use of technology encompasses a mental shift in the organisation in departing from the old methods of communication and adapting to new innovative ones.

For question one of the study, “What are the challenges encountered by schools’ principals in their integrating technology to their schools?” The study found that the main obstacles are the availability of computers, the internet, methods of teaching, which based on rote memorization and do not allow for technology, and the mental reception of schools, principals and teachers, to the concept of change, as well as to their skills in using the internet. These challenges hinder their efforts to use technology.

Resources are one of the main obstacles for using technology. As schools are dependent on their budget on the central Ministry of Education, they cannot find resources to maintain or update their technology devices, even for the simple matters such as the emails and personal use.

Using computers in the class room faces other set of challenges. These challenges include teacher's training and motivation. All teachers in Jordan were required to take the ICDL and supposedly are computer literate. Using computer in the classroom, however, requires dedication and resources, which many public schools lack the required resources.

For question two of the study: "What are the technological devices available for schools in Jordan?" Computers, internet service, voice mail, videos, email, special TV networks and other advanced technological means are rarely found. Although many computers have been distributed in the system, many schools do not use them. Teachers suggested that they hardly if any use the computer in their teaching. Principals and teachers expressed their discomfort in using them because of the lack of time or the "computers need maintenance" as one of the principals said.

Results for question three: "Do schools use websites? How effective are websites in communicating with the school community?" Participants suggested that some schools do have a website, but they do not monitor the use of it by the community and they do not follow much with it. However, the use of the website for students is also limited. The sites provide some announcements for parents, but schools send the information on paper with the students as well.

This study might inhibit some limitations as it was carried out in Irbid, a city in the north of Jordan. The capital Amman schools and private schools in Jordan may manifest different data; in fact, they should utilise technology much more than the population of this study.

In general, discussing these questions with principals and teachers gave the researcher an idea that the schools are still far away from fully using technology, which is represented by the internet services. Students are a head of their schools by using the internet on their cell phones. If schools do not make better use of the internet as much as they say they do, their students will lag behind, and be digitally disadvantaged. Soon discussing the issue of technology in schools will be out of date as it should be taken for granted as something it had to be in schools.

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Increasing the quality of research by taking advantage of literature systematic review on the example of household financial behaviour study

Jagoda Gola

Introduction

The identification of new knowledge must be based on previous researches outcomes, their findings, indicating of new areas of research or reasons for failures. The acquisition of this knowledge enable literature research. Aim of this article is to indicate the utility of literature systematic review for improving research quality in the area of household financial behaviour. It will be achieved by presenting selection of literature with manner of defining steps allowing for selecting and conducting quantitative analyse.

1. Systematic review – theoretical background

Generating new knowledge requires familiarity with the existing situation. Cognitive treatment that makes this possible is called the literature research or literature review and is based on continuous analysis of publications, including primarily scientific articles [Czakon, 2011a, p. 57].

Considering that R&D employees publish results of their research, it should be expected that the annual amount of scientific publications will increase. Confirmation of this is the increase of the number of publications covered by the abstracts and full-text database. The number of people working in R&D in most countries of the world has a growing trend in the last decades. For example in years 2000-2012 researchers in R&D¹ (per million people) has grown on Cyprus by 147% (from 321,2 to 792,7), in Portugal by 194% (from 1 624,1 to 4780,8) and in Czech Republic by 130% (from 1 351,4 to 3 111,5). The highest in year 2012 remained in Portugal, Slovenia, Germany and United Kingdom [World Bank, 2015].

¹ Countries with complete data set for years 2000-2012 from Europe were taken into consideration.

Not only number of researchers increases, but also the number of publications per number of scientists [Gajl, 2014]. It should be remembered that a significant proportion of scientific texts is not published in ranking journals and appears in other publications, often presented in national languages. All this combined with the characteristics of scientific research, which is fragmentary [Czakon, 2011b, p. 50], makes it more and more difficult to reach texts valuable from a scientific point of view. Due to this a tools that would allow to solve these problems and enables the rejection of those items that are not relevant to the subject of research interest.

One of methods that allow the researcher to find valuable scientific publications closely related to his or her area of interest is the systematic review, which refers to the review of scientific literature while maintaining a clear, documented, and also reproducible methods. It is directed by clearly defined set of questions [Matera, Czapska, 2014, pp. 16-17].

Unlike traditional, systematic review, bases on open and exhaustive selection of publications [Matera, Czapska, 2014, pp. 16-17]. Though it is less likely that the results of the literature are biases. Thus, thanks to the methodological rigor of the procedure and fulfill the criterion of replication results are more reliable [Czakon, 2011a, p. 57]. This is what determines the quality of the researcher workshop and the quality of research results [Czakon, 2014, p. 51].

Each researcher sooner or later, needs to obtain an answer on a questions about what has already been tested in the area of his or her interest, what are the main directions of implementation of research and what are the research gaps. To receive the answer an analysis of the available literature should be conducted. However, familiarise with all available publications is very difficult, and even sometimes impossible to conduct [Czakon, 2011a, p. 58]. For a limited time at the disposal of the researcher, it is advisable to use the review articles that in a simple and concise way try to present and summarise the available range of knowledge [Stolarczyk, 2010, p. 32]. However there is a question of review articles credibility due to the limited scope of knowledge presented, which may not be adequate for the needs of researcher, as well as the literature could be selected in a biased manner. The problem is solved by conducting a systematic review, which is an example of secondary research [Kitchenham, Charters, 2007, p. 3].

Prior determining the research question it should be verified whether similar studies have not already been conducted. Database of systematic reviews are, i.a., Prospero (CRD) and The Campbell Collaboration. A full-text database search can be also conducted. To preserve impartiality and transparency of procedures, and reproducible procedure should be used, following the basic princi-

ples, which include: using explicit inclusion and exclusion research criteria, adopting an explicit search strategy of scientific reports, implementing a systematic coding and quality analysis of included studies and presenting quantitative, as well as quality, research synthesis [Matera, Czapska, 2014, p. 20].

The research process can be divided into a few stages. According to Matera & Czapska [2014, p. 19] into 5 stages – defining the scope of search, searching in databases, searching through bibliography, preparing a review and preparing documentation. According to Tranfield, Denyer, Smart [2003, p. 216] it should be divided into three phases – planning the review, conducting the review and reporting and dissemination, while Czakon [2011a, p. 52] indicated on four phases: first – indicating the aim of research, second – identifying the basic literature, selecting of publications and developing the database of publications, third – bibliometry and content analysis conducting and fifth – preparing the report [Czakon, 2011b, p. 52].

The aim of the systematic review is to provide a summary of the best available, at a given time, tests that show the response to a specific, clear and detailed formulated research question [Matera, Czapska, 2014, p. 19]. The literature review should be carried out in a methodical way, allowing to repeat the implementation of individual measures by other researchers. Therefore, the first investigator should ask the specific question that will allow to find a proper answer. After its formulation a specific analysis techniques and selection of databases should be chosen [Klincewicz, Żemigala & Mijal, 2012, p. 61]. In literature as an example of good practice bibliometric analysis carried out by persons directly benefiting from their results are presented [Klincewicz, Żemigala & Mijal, 2012, p. 61].

Analytical questions are the starting point for the project in the field of systematic review of the literature. They can be ranked due to required degree of familiarity with the discipline and the difficulty of processing (Table 1). Taking into consideration these two dimensions a summary of selected questions that can help the researcher is presented. For questions, on which achieving answers require a moderate to significant level of expertise it is necessary to involve experts, whereas medium and high degree of difficulty of database processing is associated with the need for statistical processing of data, and therefore the use of a specialised software with the appropriate algorithms.

Table 1. Example of research questions according to required degree of familiarity with the discipline and the difficulty of processing difficulty of processing

The degree of familiarity with the discipline	Low	Low	Middle	High
		What? Who? Where? When? How many? How it changes over time? As compared to the common? How important? Who is important? What are the gaps?	With whom? What kind of organisation? How many?	How it will develop?
	Middle		What exactly? What are the new popular topics? With what connected? How they connected? Which adds? How supplements? Who can be a supplier/recipient? Who is a competitor? Knowledge refers to what? Whose refers to research?	
	High			What options weren't analysed?

Source: Based on [Klincewicz, Żemigala & Mijal, 2012, pp. 61-67].

Systematic reviews do not have a strict research model and can respond to very different questions, depending on the objective of the researcher [Matera, Czapska, 2014, p. 21]. After selecting a research question it can be proceeded to select criteria for inclusion or exclusion of studies for the review. The phase used for selection of literature is based on the use of keywords and is supplemented within the "snowball" procedure [Czakoń, 2011a, p. 54]. One of keywords indicating technique is to "culture pearls", which refers to scientific article that is the most significant for the topic of research [Matera, Czapska, 2014, pp. 39-40]. Others include asking a qualified librarian for keywords [Czakoń, 2011b, p. 54] or collecting words within the "snowball" procedure, basing on reference literature that is the most adequate for the topic of research [Czakoń, 2011a, p. 60].

The disadvantage of free text searches are differences in the spelling of terms (use synonyms, or words altered). Partly the problem can be solved by using abbreviations or wildcards (*, \$, ?). Using the thesaurus allows to support research on a list of terms created by a specialist. However, not all databases use the thesaurus and moreover thesaurus dictionary may be different for each database. Narrowing and widening the scope of research is possible through the use of Boole operators: and (and), or (or) not (not).

After identifying keywords, search in all databases should be conducted according to the same algorithm. It is recommended to base an analysis on a minimum of two full-text bases. This allows to ensure the widest possible range of literature being compared. For example, the two largest databases covering medical topics – PUBMED and EMBASE cover the only about 20%-30% the same published abstracts [Stolarczyk, 2010, p. 33].

The documentation stage refers to describe all the work that has been carried out, indicating the strategy and the methods used as well as to provide a number of research found [Matera, Czapska, 2014, p. 38]. The selection of texts by some of inclusion and exclusion criterion leads to creating a list of titles. Then the list should be narrowed to the full texts and verified whether they can be a subject of analysis and synthesis. Verification can be done by removing repetitions, abstract analysis, and if that is not enough, analysis of the full text [Czaron, 2011a, p. 60].

Collection of articles should be divided on the basis of the key issues for researchers, using text layers – directly related to the topic, with middle meaning and poorly on the test subject. Then, a set of publications with major importance for the examined issues should be analysed with the use of bibliometric tools. However, bibliometric techniques themselves are not sufficient to perform the test [Czaron, 2011b, p. 57].

Quantitative indicators that can be used are the appropriate tool to reflect the state and development of the field which is important for researcher. In this paper some of the normal bibliometrics tools will be presented [Marszakowa-Szajkiewicz, 2000]. The most important of them are described in Table 2.

Table 2. Chosen bibliometric tools characteristics

Normal bibliometric analysis techniques	Characteristic
Analysis of the number of publications in subsequent years.	It allows to assess at what stage is the research area.
Analysis of the total number of publications.	It allows to evaluate research activity in a given area.
Extrapolation of trends prepared on based of the number of publications in different years analysis.	It allows to introduce expectations for growth of publications in the future.
Analysis citation	This indicates the importance of a publication on the development of the discipline and presents a range of influence results; It can be carried out both forwards and backwards

Source: [Czaron, 2011a, p. 60; Czaron, 2011b, pp. 57-59; Klincewicz, Żemigala & Mijal, 2012, pp. 69-75].

The collected material should be analysed quantitatively and qualitatively. Quantitative assessment includes indication of the characteristic frequency. This step allows for the emergence of a dominant class or mainstream research. It can cover inter alia co-word analysis, applied research methods used dependent variables, theoretical foundations or research problems, co-classification and co-authorship analysis [Czaron, 2011a, p. 60; Klincewicz, Żemigala & Mijal, 2012, p. 78]. Systematic review involves also a critical assessment of collected material. Each successfully qualified text should be assessed on the basis of its methodological reliability [Matera, Czapska, 2014, p. 45]. In addition, qualitative analysis allows to arrange the existing arrangements, as well as an indication of cognitive gaps [Czaron, 2011a, p. 61].

Preparing a report on the search methodology should cover, i.a., search sources, a description of the strategy, the number of references to specific sources, methods and date of the search [Matera, Czapska, 2014, p. 51].

The main advantages of systematic literature reviews are that:

- the well-defined methodology results in situation, when it is less likely that the results of the literature are biased, and the method itself is enabling impartiality and providing reliable scientific evidence;
- research result can provide information about some phenomenon and their effects across a wide range of settings and empirical methods;
- when comparing quantitative studies, it is possible to combine data by using meta-analytic techniques, which results in increasing the likelihood of detecting real effects that would be unable to detect by individual smaller studies [Kitchenham, Charters, 2007, p. 5].

At the same time this method is not free from disadvantages. The major one is that it requires more effort and time engagement than traditional literature review. Moreover, it requires conducting researches with respect of strict regime by making necessary to verify taken steps, in case it is needed to change assumptions adopted at an earlier stage. The weakness is also attaching too much weight to the statistical significance of the results and basing on the publications of magazines, whose editorial approach selectively to send in work. In the case of combining different research problems there may be a problem in the interpretation of results.

2. Literature review example

On an example of *household financial behaviour* research area a systematic literature review was conducted. The following full databases were chosen: Ebsco Host, Emerald Management 175, Web of Science, Scopus, Science Direct, Google scholar. The databases analysis aimed to create a narrower sets of references, which will then be compared with each other in order to exclude duplication of records. Refinements were made through the use of additional keywords related to savings and debt in households: saving, debt, borrowing, lending, credit. The research questions were: *what are the main methods used to describe household financial behaviour, who are the most often cited authors and what are the most important publications from the after the world-wide financial crisis period.*

The search was conducted separately for each database indicated above, in the first instance for the same main term – household financial behaviour, followed by narrowing the results for connection to the selected keyword narrowing area of research – further the results of five combinations of narrower scope were subsequently merged, after the removal of recurring items. Also an initial verification of titles each item was conducted. The created database of articles includes limitation on the time of each publication. Publications older than from year 2008 were rejected. It is assumed that till 2007 publications describe the behaviour of households in substantially different from the present architecture of the financial system due to last world-wide financial and economical crisis. In addition, it is assumed that the theoretical part, in accordance with the ubiquitously applicable rules should take into consideration the previous achievements of researchers and therefore analysing the literature of the period 2008 – IQ 2015 was not a shortcoming. Criterion of publication year was used as a last filter to obtain a complete picture of the number of publications that have appeared in the study area in terms of time taken into account by the various databases (Table 3)

Selected items are presented in one of the six databases. Most often they appear in Web of Science database (50), most rarely in Google Scholar (9). The number of items taken from various databases shown in figure 1. The amount of articles available in specific databases is not equal 83 since some of articles were included by more than one database.

Table 3. Chosen literature and abstract data bases

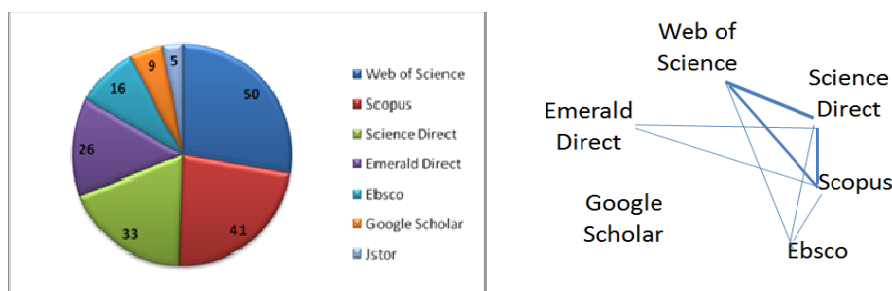
Full text database	Eb	ED	WoS	S	SD	G
Household Financial Behaviour, in title, topic, keywords or abstract	63	33	1025	1125	203	225
Years 2008-2015	30	26	557	698	114	135
Research domains – social science	–	–	365	–	–	–
Research area – business economics	–	–	282	225	–	–
Document types – article	44	26	255	193	109	–
Search within results (in all fields):						
saving	22	20	67	138	54	123
debt	15	6	37	123	40	105
borrowing	11	7	21	161	30	90
lending	16	5	8	64	21	94
credit	17	17	59	54	51	101
After removing repetitions within a given database, to verify the availability of the full text and title verification*	16	25	75	73	20	12
After verifying article, which is full access and removal of reps throughout the set	123					

* Rejected were also texts published in language other than English; analysis of databases covering articles published in Polish was carried out separately.

Source: Based on: Eb – EBSCOhost (Academic Search Complete and Business Source Complete), ED – Emerald Management 175, WoS – Web of Science, S – Scopus, SD – Science Direct, G – Google Scholar.

Of the 123 articles, 80 occurred in only one of the analysed database 34 in two and 9 publications were available in three databases. Linking databases for recurring publications is presented on figure 2. The thickness of the line illustrates the amount of recurring publications – publications were frequently amplified in Web of Science and Science Direct (20), Web of Science and Scopus (17) and Web of Science and Ebsco (11).

Figure 1. Share of selected articles according to full-text database it was taken from and recurring of selected publications among full-text databases



As the next step, on the basis of abstracts or in case of their absence on the basis of the full text, the level of adequacy to obtain an answer to the research question was specified (Figure 2). Further analysis was conducted only basing on the high adequacy literature.

Figure 2. Level of selected articles adequacy

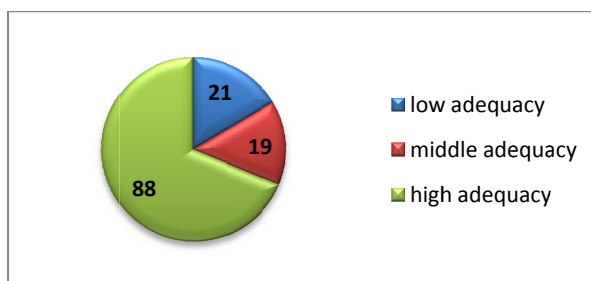
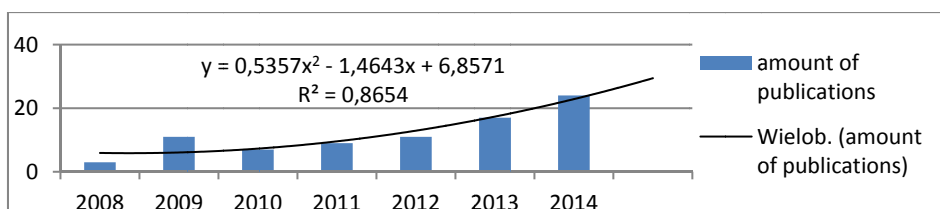


Figure 3. Amount of publications



An analysis of articles amount published each year was conducted. As shown on Figure 3, there is an increasing trend when considering amount of articles occurring yearly (years 2008-2014 were analysed, since data from year 2015 could interfere the whole picture [Klincewicz, Żemigala & Mijal, 2012, p.75]. This may indicate for increasing interest in this area of science.

Figure 4. Key words analysis – conducted to both groups – of 123 articles and of 83

A group of 123 articles

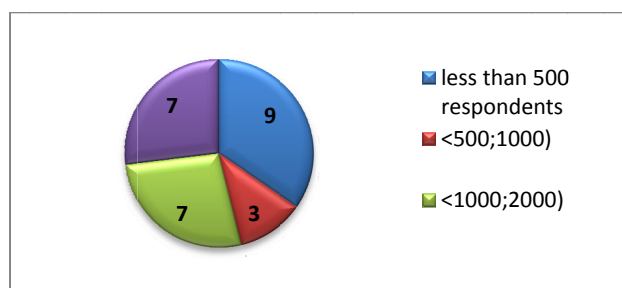
A group of 83 articles



Analysis of visual presentation of keywords, let for noticing that in the case of a larger set of 123 article there are more keywords than in case of a referral set (Figure 4). In the reference set beyond keywords selected at the initial stage of research words, which made it possible to make a selection of articles for further research important are: literacy, social, savings, finance. Relatively little importance have lending and borrowing. These applications can be used to verify the choice of word for further research.

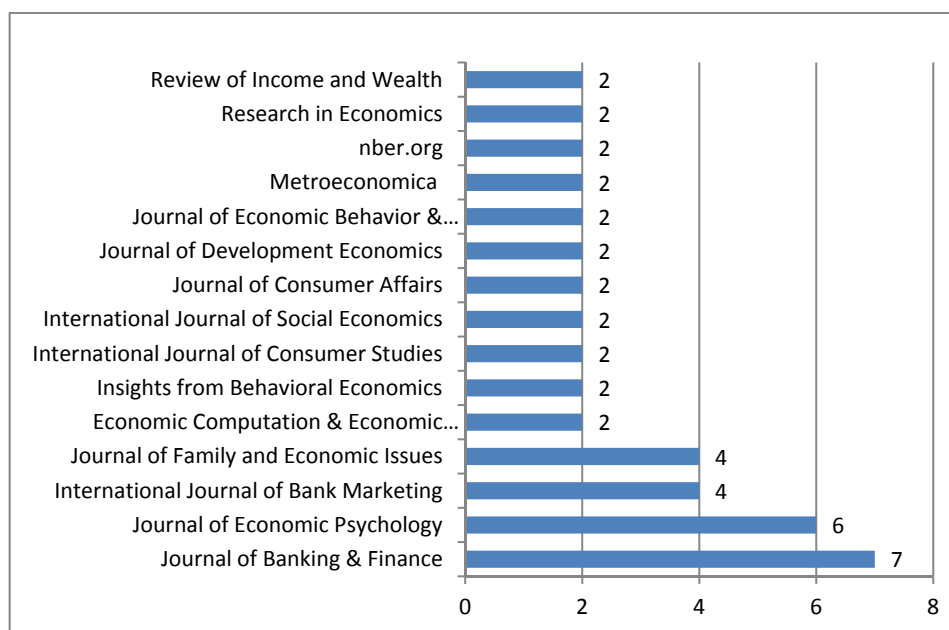
When considering the research tool 26 articles were based on primary sources, of which 2 were quality researches. Articles were divided according to size of sample (Figure 5). The largest was a group of articles presenting the considerations of researchers carried out on smallest respondents groups. However, only slightly smaller share showed articles presenting the results of research conducted on larger groups – over 1000 and over 2000 respondents.

Figure 5. Sample size



The analysis was also conducted due to the title of the journal in which the article was printed (Figure 6). Most of the analysed set of articles were published in the “Journal of Banking & Finance” and the “Journal of Economic Psychology”. Outcomes of this step indicates most interesting journal titles when considering the area of household financial behaviour.

Figure 6. Documents per source



Analysis of co-authorship (co-authorship) was carried out in order to identify patterns of cooperation and determination of a group of people most active in the analyzed research area in years 2008 to 2015 (the first quarter). Most of the articles was written in pairs (30). Also they accounted for a large part of the development of the individual and prepared by the three authors. A larger number of authors had only 8 articles. To a small extent the names of the authors were duplicated. Among the most active authors, considering authorship or co-authorship of articles, in the analysed set can be assigned Niculescu-Aron (4 articles). Eight authors participated in the preparation of 2 articles, while others only prepare one (Figure 7).

Figure 7. Documents by authors



Citation analysis refers to the substantive relationships between publications. Quoting a given work may indicate the indirect transfer of knowledge, which at identifying the most important of the literature positions and their authors that can significantly affect the further development of the subject matter of the research problem. At the moment, it is assumed that the increase in the number of citations does not necessary clearly indicates the high level of knowledge of the article and, therefore, informs only about the impact on the study. The analysis shows that the most frequently cited works is *Reinforcement learning and saving behaviour*. A list of the most frequently cited articles in the analysed set is presented in Table 4.

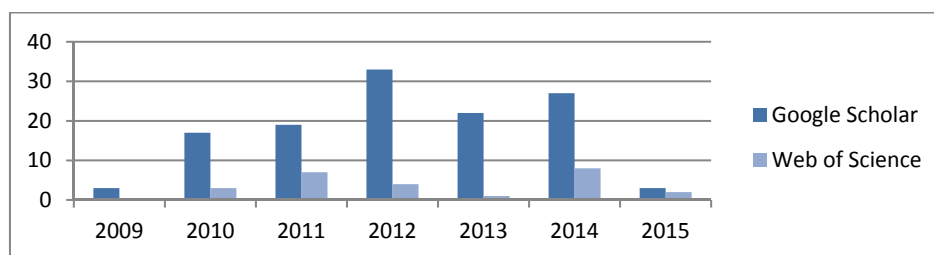
Table 4. Most frequently cited articles

	Title and author	CitationNo.
1.	<i>Reinforcement learning and savings behavior</i> by J.J.Choi, D. Laibson, B.C. Madrian, A.Metrick	124
2.	<i>The unbanked: Evidence from Indonesia</i> by D. Johnston, J. Morduch	94
3.	<i>Did inequality cause the U.S. financial crisis?</i> by T. Van Treeck	57
4.	<i>Household debt repayment behaviour: What role do institutions play?</i> by B. Duygan-Bump, C. Grant	54
5.	<i>Where is the missing credit card debt? Clues and implications.</i> by J. Zinman	49

Source: Based on Google Scholar.

According to the Web of Science (WoS) “Reinforcement learning and savings behaviour” has been cited by 23 articles since publication, according to Google Scholar (GS) – 132 (after verification 124) – Figure 8. The difference may be a result of different methodology – WoS bases only on own databases, while SG includes data from many databases covering among others books, working papers and others. It should be remembered, that the amount of citation shows influence of specified article on researchers community, however, does not indicate its usability [Marszakowa-Szajkiewicz, 2000].

Figure 8. Comparison of citation in years of Reinforcement learning and savings behaviour due to Google Scholar and Web of Science



Source: Based on Google Scholar.

Conclusions

Before creating own database, the features offered by each full-text databases to choose the optimal objective selection criteria to the subject of research should be carefully consider. Verification should be carried out based on the criteria set out at the beginning of filtering that should not be changed during the implementation of research. If they were, a the relevant information should be included in the report. Any changes made during the procedure mean that a number of tasks already completed should be treated as defaulted and start the procedure from the beginning or from the level at which the changes were made. This involves not only the loss of time, but also the occurrence of unintended errors influencing the quality of the results. Keyword selection should be made separately for each language in which the search is made.

Conducted analysis allowed among others, to determine the most frequently cited authors most cited works, the popularity of research area of household financial behaviour in recent years. To complete the conducted analysis a qualitative analysis should be added. However, due to the limitations of this study, it will be a subject of another paper.

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Visual communication – an opportunity with a handle?

Karina Cicha

Introduction

Henry David Thoreau once said: “the question is not what you look at, but what you see”. A term visual communication refers to the actual presentation of information through a visible medium such as text or image. In other words, every time when we pass by a road sign, every time we are handled a business card, every time we see an advert in a magazine, every time we stumble upon an interesting website – we face the visual communication. We are in these and many other situations perfectly aware what are we looking at: letters, numbers, photos, diagrams event. But what do we actually see? In my opinion, we may see more information than there actually is.

For instance, an advert does not simply informs about the product or service, but transforms a viewer into a customer almost forcing him or her to buy the commodity or to use it. A business card does not simply informs about telephone number or e-mail address of its handler, but also reflects the design thinking of the whole company, its sense of aesthetics and, what is more important, communicates its status or even a brand. A website designed with great caution shows not only the information we were looking for, but also the technical capabilities of its creators. When it comes to road signs, though, the information is, fortunately, less complex. Nevertheless, these examples show clearly not only the importance of visual communication but also its complexity.

They also present, what Harry Jamieson wrote, that “the power of visual communication relies on its involvement with perception, and thus it has one foot in nature, while its other foot is in codes, in the invented world of society and culture” [Jamieson, 2007]. The question which arises here is to what extend visual communication can be considered as an universal system of communication. In other words, how much do we actually need to know to understand the message fully. Or maybe visual communication is a chance of some sort letting everyone understand everything no matter what language one speaks, how educated one is or in what culture one was raised. Maybe thanks to that feature visual communication can become a universal language understood by all? But, what is most important, how to use these features in educational process to make it most efficient.

1. Why visual communication works?

Visual communication is a term defined rather loosely. The simplest explanation of what visual communication is gives Wikipedia, focusing on presentation of information – both graphical and textual. Although, this definition is simple and clear, it does not fully describe this phenomenon. On the one hand, it is obvious that while speaking about visual communication we must speak about the process of representation. On the other hand, though, it is not enough. There is definitely lack of terms such as structure or system or language in this definition. Jonathan Baldwin, while talking about visual communication, emphasises that it needs to be seen from two different angles. “The first views communication as a linear process in which a message or idea is passed from A to B. The second approach views communication as a production of meaning” [Baldwin, 2006, pp. 21-22]. D. Machin also points out this double identity of visual communication. In his understanding, when we refer to visual communication we refer to acts of representation as well as cultural meaning [Machin, 2014].

At this point it is essential to notice, that while speaking about visual communication we speak about a language of signs, combining graphical and textual elements, or using just one of them, to pass information, which is decoded by our brains. To understand the information given our brains base on schemes and structures we know from experience. We have learnt meanings of certain signs through daily experience, not during the educational process. Many conducted research, especially in the field of neuroscience or psychology, showed that “visuals may be processed and form the basis of future action without passing through consciousness at all [...]. Ultimately the key to understanding visual communication lies in the neurological works of the brain” [Barry, 2005, pp. 45-62]. However, it is crucial to be aware, that some of the signs are universal enough and known widely enough to be recognisable across many cultures, even though their importance varies in every culture. P. Lester writes that “culture determines the importance of the signs that affect the people who live with and among us” [Lester, 2013]. In other words, a group of people standing at the street may be looking at the same things surrounding them, but what they actually see, which details they focus on may depend strictly on culture they were raised in, their gender, race, religion or even sexual orientation. This clue seems not to be overestimated for graphic designers, who try to pass information using combination of text and images. Awareness of the differences in the reception allows to design information more carefully.

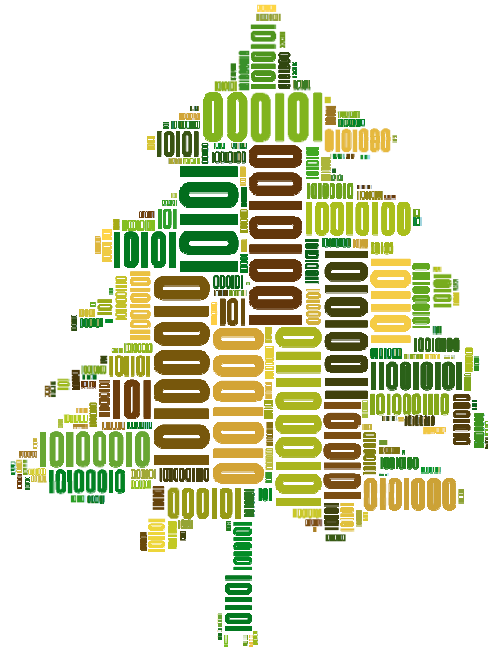
Figure 1. Beer Towarzysz (comrade) – designed by Karolina Kędzierska; showed at Poznań Design Days 2015



On the one hand, as showed above, design may be closely related to a period of time and its icons. It may refer to a particular country's history and those visual codes, which are well known among the society. In this example the designer chose portraits of Marx, Lenin and Stalin (related to Polish and Russian communism) and combined them with a popular at that time saying "Comrade comes with us" and used them in her design of beer bottles. That shows clearly the important role of the recipient of the visual message, who, to appreciate fully the design and its idea, needs to be aware of certain codes included into its structure.

On the other hand, some projects need to use codes well known in a particular group of recipients, but at the same time they should remain understandable for the majority. The example below was designed as a logo of The Department of Informatics and Communication at the University of Economics in Katowice. The aim was to join ecology with technology. The element strictly related with information technology is the binary. The shape of the tree, a pine, used in the project, as well as colours, emphasise the relation with ecology. Even if someone is not aware of the usage of binary code in the project, it does not become illegible to him or her. Although the binary may be considered as some kind of special knowledge, reserved to the specialists, usage of numbers, however, is not perceived that way. That is why the project may be addressed to the majority.

Figure 2. Pinus cembra made of binary code



The examples given show that visual communication may be considered as a language. In both cases text and images were used. But also in both cases the meaning of the projects was constructed in the relation to something beyond the designs themselves: the history in the first case and the recipients' knowledge or experience in the second. As in natural language, where letters create words and words build sentences according to grammar rules, here the main principle of design is the same: the designer constructs project out of certain elements, which, at the end, means more than its every single piece alone.

An excellent example of in what ways visual communication can be compared to language is Otto Neurath's Isotype – a pictographic design system created in the 1920s to “visualize social and economic relations especially for uneducated persons and to facilitate their understanding of complex data” [Hartmann, 2008, pp. 279-294]. Neurath himself called Isotype “an education by the eye”. The idea of the Isotype was simple: by using a set of internationally standardised graphic symbols one could visualise different sets of data, mostly to make a comparisons or to point out the quantitative change.

Figure 3. Otto Neurath's logo of Isotype used in the 1920s and 1930s

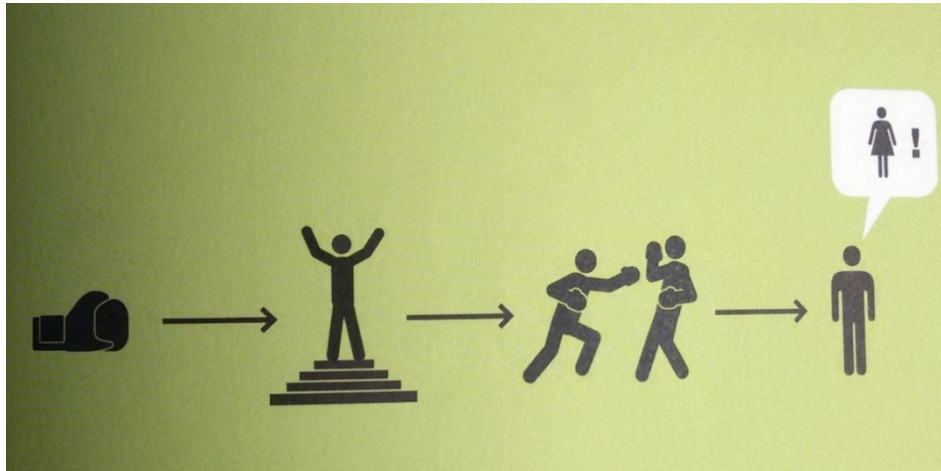


Source: [Neurath, 1936].

The objective of Neurath's project was, as Hartmann writes, to create a "helping language" not to replace any of the existing ones, although Neurath himself saw the great potential in Isotype. To him "words make division, pictures make connection" [Neurath, 1936]. He also claimed that picture-based language might be a starting point for visual education. Taking modern tendencies to present every data visually into consideration, one may say that Isotype was truly a visionary idea, which came to life after decades from its creation as the infographics.

A similar to Isotype, though not to educate, but to entertain rather, idea came to Matteo Civaschi and Gianmarco Milesi, who had designed a book called "Film in five seconds". As they both write in a preface: "it is simple system, one we called 'Shortology' for lack of a better term. Basically, it involves removing all the unnecessary bits, to leave you with a few graphical icons. [...]. The book is like a quiz, and the game is to guess the film from the graphics" [Civaschi, 2013]. What is important here, the icons are used not to visualise data, but to tell a story or, in other words, to visualise a movie plot. Usage of graphical symbols in order to narrate brings this type of visual communication even closer to the language than the Isotype was.

Figure 4. Can you guess the film title? Illustration from “Film in five second” by M. Civaschi and G. Milesi



Source: [Civaschi, 2013].

Particularly interesting in this case is, that the designers created not only a book. They used certain software, designed for mobile devices, which allows viewers to unlock movie animation by scanning an eye icon, placed at the bottom of the page, with smartphone or tablet. Although the presentation of the movie plot is graphically similar to Neurath's Isotype, the animation combined with it goes definitely beyond his expectations and is possible only because of the new media and information technology development.

An example of data visualisation, mentioned before, which gains popularity every year, are infographics. As Mark Smiciklas notices, “infographics combine data with design to enable visual learning” [Smiciklas, 2012]. This type of data presentation's main objective is to make information clear, simple and readable to everyone. Nowadays, more and more free software is created to enable every person with access to the Internet designing an infographic. The best-known and widely used applications for infographics creation are: Piktochart, Easel.ly, Visual.ly. The last one is not strictly application, but also a social-media-like webpage, where designers can show their work and also comment on them. All can be used free of charge. The need of designing them had already been seen in 1983 by E. Tufte, who wrote about graphical displays, giving advices to the designers. According to Tufte, “graphical displays should:

- show the data,
- induce the viewer to think about the substance rather than about methodology, graphic design, the technology of graphic production or something else,
- avoid distorting what the data have to say,

- present many numbers in a small space,
- make large data sets coherent,
- encourage the eye to compare different pieces of data,
- reveal the data at several levels of detail, from a broad overview to the fine structure,
- serve a reasonably clear purpose: description, exploration, tabulation or decoration,
- be closely integrated with the statistical and verbal descriptions of a data set” [Tufte, 1983].

What needs to be taken into consideration, however, is the fact, that nowadays not only large sets of data are presented as infographics. More and more often infographics are used as an educational aids in teaching process or as a commercial tool in business during companies’ presentations. They have become so popular, that even sets of the best infographics are published annually.

Figure 5. Infographic “The World as 100 people” from The Best American Infographics 2014



Source:[www1].

The process of design requires from the designer certain skills or capabilities such as creative thinking as well as knowledge of particular design tools like graphic software. This work is not a simply process. Speaking about designing P. Rand says that to “design is much more than simply to assemble, to order, or even to edit; it is to add value and meaning, to illuminate, to simplify, to clarify, to modify, to dignify, to dramatize, to persuade, and perhaps even to amuse. To design is to transform prose into poetry” [Rand, 1993]. This statement clearly reflects into modern infographics design.

Visual communication is a process more and more often applied into various aspects of everyday life. The question is why? The simplest explanation is: because visual communication works and does its task. As G. Rose notices, the culture, we are all living in, is a visual culture. “The term refers to this plethora of ways in which the visual is part of a social life” [Rose, 2012]. From business cards to packages, from brochures to web applications, from single logo to a picture language – we are surrounded by elements of visual communication. Visual communication may be considered as an universal – to some extend – language, which is known globally, although not necessary taught or learnt. Very often the visual aspect of communication is a mean to better understanding or a substitute of a language-based communication in cases when there is a lack of language skills (foreigners, autistic people, children, etc.). The question, however, remains, whether visual communication can be used in higher education as a teaching tool or, at least, as a supplement to the process? And, if so, what kinds of limitation can there be?

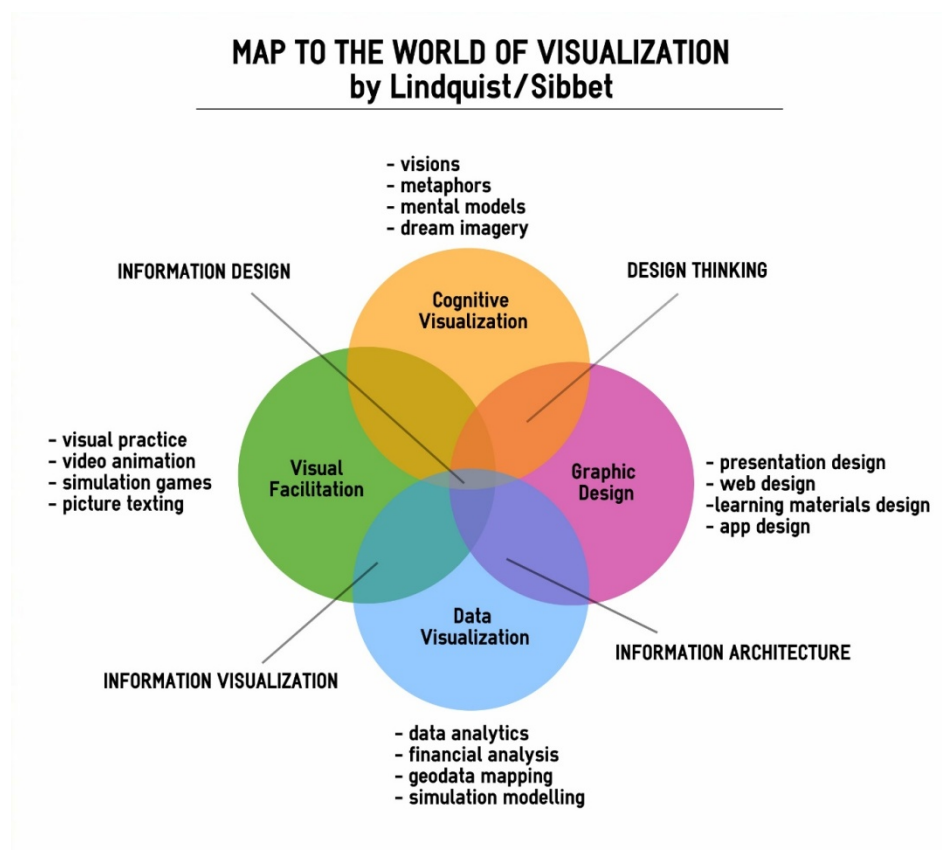
2. Visual communication as an educational tool

Nowadays, multimedia presentations are the most popular tool used by teachers in educational process. Instead of noting crucial information on the blackboard, as it was previously, teachers compose slides and screen them. Showing early prepared presentations is obviously faster than noting and also allows to include various multimedia like photos, diagrams, charts, tables, web page links, sounds or even movies into the structure of the presentations. The development of the graphic software and computer devices has made presenting information easier. It also has made students used to this type of teaching methods. There is no necessity of teaching how to understand presentations used during classes. The process of understanding their content is related to the term visual literacy, which is defined as “understanding how people perceive objects, interpret what they see, and what they learn from them” [Elkins, 2010]. Nevertheless, one must remember that the development of IT tools and software continues and will continue. Every year either new or modified software, which can be used in teaching

process, is presented. The question is, however, are there any differences and what software should the teachers choose to make their lectures more interesting to the students and to make the content easier to memorise.

D. Sibbet along with E. Lindquist created a model called “Map to the World of Visualization” [Sibbet, 2012]. This kind of diagram, although still under debate, may be useful to realise, that different types of data need different approach to their visualisation. Terms such as information architecture or information design appear to make the process of visualisation more precise taking into consideration the fact, that they focus on different matter and combine different activities. For instance, although information visualisation as well as information architecture include process of data visualisation, the first one uses visual facilitation, while the other is graphic design based. Their final products are also different. Information architecture brings web apps to the public, while information visualisation simulation games or video animation.

Figure 6. Map to the world of visualisation by Sibbet/Lindquist (simplified version)



Source: [Sibbet, 2012].

What needs to be considered, while talking about information design, is its usage in educational process. As mentioned before, the most commonly used educational aid nowadays are multimedia presentations. The variety of graphic software allows to choose the most appropriate tool for visualising information. However, studies have shown that the acquisition of the information changes and is correlated with the tool/software used.

In 2013 the research designed by Patryk Dorosz, a student from University of Economics in Katowice, took place. The aim of the study – as a part of bachelor’s thesis – called *Information design – multimedia presentations analysis* was to investigate are there any discrepancies in information acquisition among students who participated in lecture, where the teacher used different types of multimedia presentation. The teacher was asked to give a lecture divided into three parts. There were three different types of software used to create every presentation: PowerPoint, JavaScript, and Prezi. The total number of students in the group was 58. The experiment was conducted during one single lecture to guarantee the same conditions and participants taking part in it. After the lecture the students were given a questionnaire to fill up. It was built with two parts: in first, the questions were about students’ reception of the presentations and the points to be given were from 1 to 10. The second part of the survey was the test based on the lecture’s content. The students were asked to answer the questions according to what they had remembered from the lecture. The purpose of the analysis was to discover whether there is a correlation between students’ notes given to the presentations and their knowledge of lecture’s content. The results are quoted with author’s consent. The results were as follows:

Question	PowerPoint	JavaScript	Prezi
Did the presentation bring attention?	5.5	6.1	7.4
Was the presentation interesting?	5.7	5.4	7.3
Did the presentation help to remember the lecture’s content?	5.9	5.5	6.7
Did the presentation help to build teacher’s authority?	6.3	5.9	7.6

The students gave points from 1 to 10 in each question. The numbers in the table present the average of all the answers given. The results of the questionnaire’s second part, where students gave answers according to their knowledge from the lecture, are as follows:

	PowerPoint	JavaScript	Prezi
Correct answers	63,8%	70,3%	68,1%

The highest notes received Prezi presentation while the lowest PowerPoint one. It means that the students found the Prezi presentation most visually attractive. When it comes to the percentage of correct answers from the test, the best result is correlated with JavaScript presentation and the worst with PowerPoint one. For this particular experiment the conclusion is obvious for at least one presentation: PowerPoint presentation received the worst notes and the percentage of correct answers from the test based on this presentation was also the lowest. The questionnaire also allowed the students to write their remarks. Any negative remarks given to the presentations were associated with PowerPoint presentation, which was defined as boring and used too many times in educational process.

It is necessary to realise that the experiment should be repeated with larger group of students and including the situation, when there will not be involved any multimedia presentations. This may help estimate the baseline for acquisition of the lecture's content and compare it with the results based on multimedia presentation usage.

Conclusions

Visual communication is a powerful tool. It is, on the one hand, commonly used in educational process, but, on the other, it is still a matter of teachers' individual choice which software they use to make their classes more attractive to the students. Studies have shown that there are differences in information acquisition correlated with various software usage. Also the characteristics of the recipients group needs to be taken into consideration while preparing the presentation. What is more, visual communication does not assume only multimedia presentations usage. It is complex and brings very different possibilities as well in graphical as in textual data visualisation.

To make lectures more visually attractive one can use not only multimedia presentations but also infographics. However, there is a risk that the form of the presentation or graphic content will be remembered instead of its merit. That is why in case of educational process visual communication should be treated according to Neurath's statement as "a helping language". It is also important to know that any element of the visual communication even if referring to a universal scheme of representation is, however, related to particular culture. That is why when presenting information the teacher needs to be aware of this relation. To use visual communication elements fully and only with benefits means to understand it and to be aware of its limitations.

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Part III

New media in higher education market

Media tools in university education in the perspective of Norwegian and Polish experience

Andrzej Pawluczuk, Karolina Racis & Małgorzata Olchowik

Introduction

Over the recent years, there has been an increase in computerisation as well as the overall number of Virtual Network Users and the Users of Internet services. New technologies play an important role in the process of education. Communication revolution is the term used to describe a rapid development of communication due to the improvement of new information techniques and technologies. Information and Communication Technologies (ICT) have become common in all spheres of life, especially in education [Bugajski, 2007]. The Internet has gradually become dominating telecommunication method equal to telephones and television in terms of popularity and speed [Grzenia, 2008]. In the last ten years, there has been a tremendous increase in the number of Internet and ICT users. A survey which was conducted in 2014 by CBOS showed that almost all Internet users (98%) have the access to the home network. In addition, for several years, there has been an increase in popularity of Wireless Internet – currently used by over three quarters of users (77%) [CBOS, 2014].

Information and communication technologies (ICT) are important in the life of people in the modern world. They are its integral part and accompany them in every area of life. According to the Central Statistical Office, information and communication technologies (ICT) are defined in the following way: a family of technologies that process, gather and transmit information in an electronic form. The development of this technology makes it the driving force of the development of civilization as well as social and economic development. According to the definition of the Polish Agency for Information and Foreign Investment (PAIZ, nowadays PAiZ), “the ICT sector is engaged in the production of information, communication equipment and accompanying services“ [GUS, 2010].

Below there are tools and methods specific to new technologies in education:

- Internet (as a tool to search for information);
- websites and databases as information and educational resources;
- video-conference;

- web applications (software) as tools to support specialisation;
- mobile applications;
- e-books;
- multimedia presentations (prezi.com);
- Moodle;
- MOOC – Massive Open Online Course (udacity.com; edx.org; coursera.org) [Polak, 2012].

A massive open online course (MOOC) is a model for delivering learning content online to any person who wants to take a course, with no limit on attendance [www1].

In the world MOOC type courses are becoming more and more popular, and most of them are available in English. Currently the scientists are working on the creation of this system in Poland. 20th January 2015 at Warsaw University of Technology took a place the conference “The Power of MOOC – time for Polish platform”, organised by the Foundation of Young Science. The aim of the conference was Initiated cooperation researches interested in building a platform MOOC and dissemination of scientific knowledge [Kępińska-Jasny, Łyp-Wrońska, 2015].

Below there are advantages and disadvantages of new-media tools, so in the literature it could be discovered such advantages like:

- saving much time,
- lower expenditure on education,
- easy and unlimited access to the various sources of information,
- wide access in the training simultaneous,
- easy control of learning progress and checking knowledge,
- unified message to all the listeners of specific course or training,
- learning each person’s own pace,
- high efficiency through transfer of knowledge in a varied form (Internet, audio and video, flash animations) [Komańda, 2014].

The disadvantages are:

- significant expenses related to the implementation of remote education system,
- too slow connection or Internet outages/infrastructure,
- limited contacts with other people,
- the problem of self-discipline among participants [Kotkowska, 2013].
- eye strain,
- dehumanisation.

1. Literature study

In the recent years has been observed an increase in using e-learning in the sector Polish Higher Education. This issue has been discussed in many scientific publications. An example of such a survey is: *E-learning at public and private universities: the prospect of students selected economic faculties*. The study comprised 133 survey questionnaires. The respondents were students of four universities located in Silesian voivodeship – two public and two non-public. The aim of the survey was to obtain information on the opinion of students of economic faculties on e-learning forms of support and implementation activities. This objective was achieved by asking the students questions about advantages and disadvantages as well as the usefulness of e-learning in the educational process. The results of study indicated that both groups of students – public universities and private universities – are compatible in terms of the main advantages and disadvantages of e-learning activities. The main advantage is no necessity of daily attending to the university indicated by an average of 35% respondents, while the 46% regarded the lack of physical contact with the teacher as a disadvantage e-learning has been found as a useful form of teaching at the economic faculty by 39%. The opposite opinion was expressed by 29% of respondents [Komańda, 2014].

Another article discussing the issue of using e-learning in higher education is Moodle platform functionality in the opinion of students of Higher Schools of Banking in four cities: Poznań, Wrocław, Toruń and Gdańsk. The aim of the study is to find out about the opinion of students of Higher Schools of Banking on the functionality of Moodle. The research was coordinated by the Center for Distance Education Development (CeREO) – intercollegiate design team for the coordination of activities related to e-learning in Higher School of Banking. 2,658 respondents took a part in the study. One-third of respondents declare using Moodle platform several times a week, but most often (42%) use it several times a month. Every fifth respondent uses the Moodle platform resources only in the session. 37% respondents declare that they have no difficulty in using Moodle, the others, enumerate lecturer's absence (45%) and problems obtaining the password to the course (13%) [Nogieć, 2010].

The e-learning tool for students has a positive influence on their progress test results. This was discussed on the basis of a scientific study of Czech scientists. The research describes the e-learning tools introduced to enlarge the range of background studying tools for students of the obligatory course of Law Basics at the University of Economics in Prague. The e-learning tool was elaborated and provided students with a pilot version in the previous semester only in certain topics (areas of law) that are presented to students during the course. The

e-learning tool to students helped to increase in the average correctness of answers at the test from 43.10% to 62.33% and the average correctness grew by 19.23%. The survey confirmed that the e-learning tool was successfully introduced into the Law Basics course in the pilot version. The research concluded that the provision of the e-learning tool for students has a positive influence on their progress test results [IETC, 2014].

It is worth pointing out that in the world there are some under developed countries where the Internet access is still difficult. Nigeria is an example of such a country and therefore, became the subject of research carried out in Adekunle Ajasin University, Akungba Akoko Ondo State, Nigeria to verify the level of availability of on-line learning tools and to find out the level of readiness of both the teachers and students toward using it. From the finding of this study, the conclusions is that online learning tools are available in Adekunle Ajasin University, Akungba-Akoko and both the Teachers and students have required basic ICT skills to implement online instruction [Afolabi, 2014].

Another article discussing the issue of using media tools in higher education is: *The possibility of using the iPad in science and higher education*. In 2010. in the United States experiments started to be conducted aim at understanding the possibility of iPads and their using in science and for science. At this point, the study conducted by the American Pearson Foundation, which concerned the using of these devices by students should be mentioned. It turned out that at the beginning of 2012, the number of tablets which they had was three times higher than in the same period in 2011. Among all surveyed students, 25% have already owned such a device, with a further 25% have planned to purchase within the next six months. Significant from the point of view of this article is the fact that the most frequently reported was the iPad tablet (63% of users). Students by iPad using the free iTunes application, which easily allows you to access video lectures, podcasts, university courses, textbooks and other resources (over 500 000 documents) with the world's best universities. The use of tablets for scientific and teaching purposes is a visible trend, in which follow a number of academic centers. Currently the Polish universities are not dealing with examples of using this technology within the institutional framework of projects implemented to improve the educational process. An example of this is that the use of iPads in the process of teaching in universities is a good idea and a way to present students with new learning opportunities [Gmiterek, 2013].

The research *The move to Moodle: Perspective of academics in a College of Business* involved an online email survey that collected responses from participants through a web-based questionnaire. The study took place in June 2010 in the aftermath of a move to Moodle, which had been instigated by the Head of

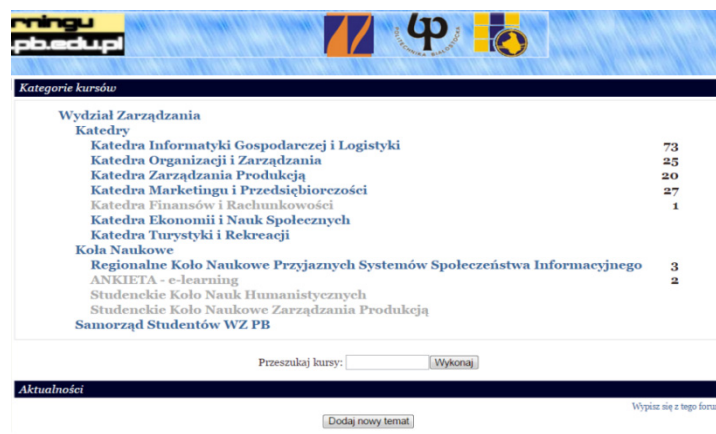
the College of Business at the beginning of Semester 1, 2010. The sample included all academics in the College of Business, of which 86% responded. Respondents were posed a series of possible “benefits” of Moodle. The five items which gained the highest number of positive votes were: makes content available for study and revision (67%); reduces the cost of producing student handouts (63%); offers more variety of content (60%); helps to keep my course up-to-date (52%); offers students more flexibility over their learning (50%) [Walker et al., 2011].

2. Practice of media tool used at the Faculty of Management at the Białystok University of Technology (BUT) and the Faculty of Social Science at the University of Bergen

This section presents the experience of the Faculty of Management at the BUT concerning education of students using the Moodle platform. The use of distance learning methods takes place in the convention of e-learning almost in all areas of university teaching. Increasing use of this method is also within the scope of the educational process at technical universities.

The Faculty of Management at the BUT was established in 1990. They educate students in the fields of: logistics, management, tourism, service engineering and production management. Practical experience in the scope of e-learning university have achieved since 2000. Practical support e-learning of the Faculty of Management at the BUT is Moodle (version 1.6.4), which belongs to the most widespread in Poland solutions in this field. At the end of May 2015, the total number of courses prepared and implemented throughout the holding education was 151. The status of number of users on 25th May 2015 amount to 9306 (active and passive users).

Figure 1. Total number of courses on Moodle platform



Kategorie kursów	
Wydział Zarządzania	
Katedry	73
Katedra Informatyki Gospodarczej i Logistyki	25
Katedra Organizacji i Zarządzania	20
Katedra Zarządzania Produkcją	27
Katedra Marketingu i Przedsiębiorczości	1
Katedra Finansów i Rachunkowości	1
Katedra Ekonomii i Nauk Społecznych	
Katedra Turystyki i Rekreacji	
Kola Naukowe	3
Regionalne Koło Naukowe Przyjaznych Systemów Społeczeństwa Informacyjnego	2
ANKIETA - e-learning	
Studenckie Koło Nauk Humanistycznych	
Studenckie Koło Naukowe Zarządzania Produkcją	
Samorząd Studentów WZ PB	

Przeszukaj kursy: Wykonaj

Aktualności

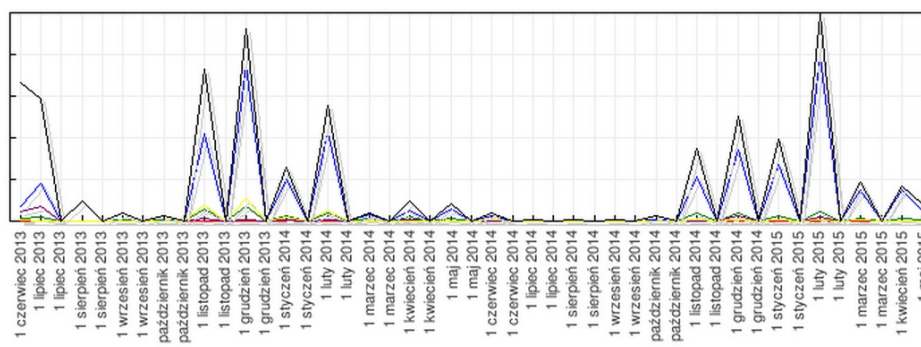
Dodaj nowy temat

Wypisz się z tego forum

Source: [www2].

Below there is graph showing total activities among lecturers and students at the Faculty of Management at the BUT. It presents the results of the last two years. It is worth to notice the strong trend during the session and at the beginning of each academic year. The summer months are characterised by low activity that may result from the fact that academic teachers who use the platform Moodle, don't take classes in the summer semester.

Figure 2. Academics and students activities at the Faculty of Management at the BUT



Source: [www2].

E-learning platform Moodle, designed by Martin Dougiamas, was written using the PHP scripting language and relies on MySQL database. The author defines Moodle as a course management system (CMS), but in fact it is a system that combines features of the LMS (Learning Management System) and LCMS (Learning Content Management System), a system that allows operation of the entire virtual learning environment (VLE) [Adamczewski, 2007].

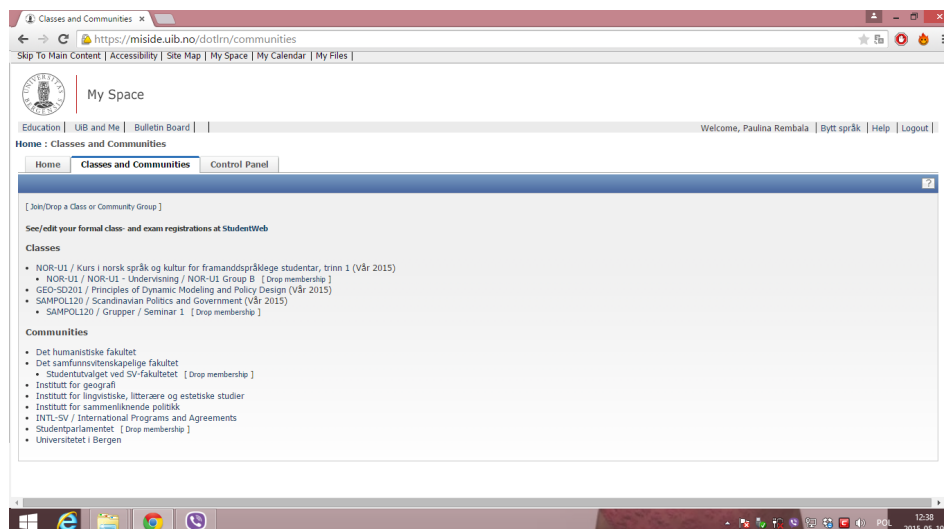
Participants of training courses who are supported by the Moodle platform can use:

- resources which contains substantive content (plain text, HTML, multimedia presentations, multimedia lessons, videos or files of any type);
- resources for communicating with the teacher – discussion forums, chat rooms, voting;
- resources for checking the participant's knowledge – quizzes, assignments, and more [Lorens, 2011].

At the Faculty of Management students can use only resources that contain substantive content (for example: mathematical formulas, contents of tasks and lectures). In some extend, they could provide test for students, but it is not popular among academics, because there is no possibility to check that the answer are would written by them self.

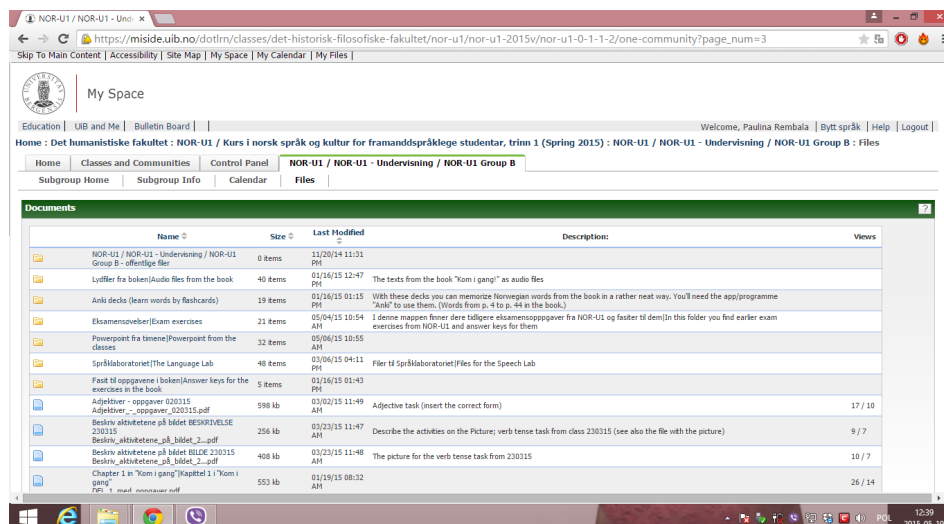
To sum up the Moodle platform at the Faculty of Management at the BUT characterised the narrow scope. The university does not use the full potential which offers this new media tool. The students do not have opportunities to attend on-line courses, quizzes or tests of knowledge because the University does not use these forms of e-learning. On the Moodle platform academics put only the content of the lectures, mathematical formulas and content tasks.

Figure 3. My Space database from the University of Bergen: Classes and Communication student view



Source: Print screen from the enrolment student P. Rembala.

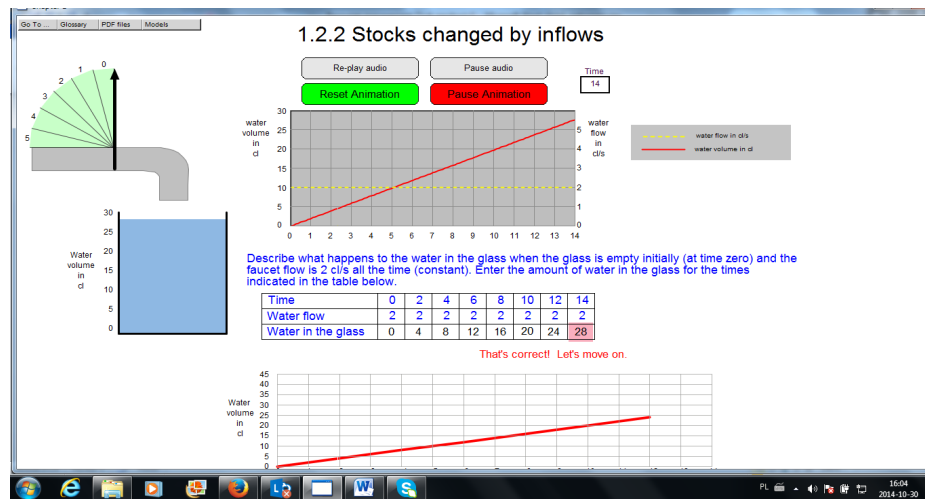
Figure 4. My Space database from the University of Bergen – resources of the subject



Source: Print screen from the enrolment student P. Rembala.

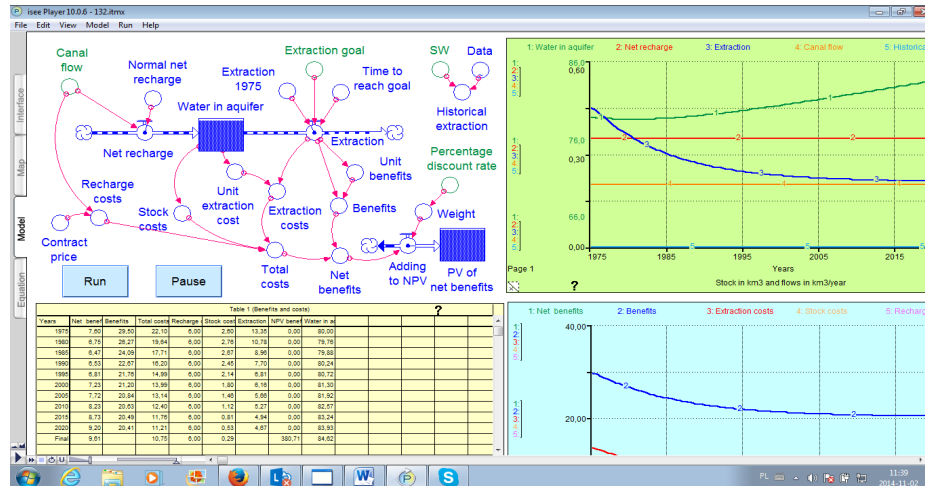
Good practice in distance learning, which help takes course for students of the UiB and other interested person outside university is based on example course Natural Resources Management. This innovative formula is built on special dedicated software for animations and simulations. Well-structured course program, many videos and task to solve, cause that course is very intensive and comprehensive of good practical knowledge. As the main authors call them: that convenes a worldwide virtual classroom [Davidsen et al., 2014]

Figure 5. Natural Resources Management subject taught at University of Bergen: teachers E. Moxnes, B. Kopainsky, S. Alessi



Source: Print screen from the enrolment academic: A. Pawluczuk.

Figure 6. Natural Resources Management subject taught at University of Bergen: teachers E. Moxnes, B. Kopainsky, S. Alessi



Source: Print screen from the enrolment academic A. Pawluczuk.

3. Discussion

The data presented in Table 1 show a quintessential use of new media tools at two faculties co-operating with each other, which is a strong word of an overstatement in relation to the scope and budget. The range of IT tools in education for stationary and e-learning courses at the Faculty of Management at BUT compared with the Faculty of Social Sciences at UiB, shows that the level of media tools used at the University of Bergen (UiB) is much higher than in BUT. USOS in comparison with My Space definitely does not use its potential, which it offers for academics and students. Moodle is a complement to USOS, where My Space has an independent, own database, which helps users. Of course a big amount of work should be done at the beginning of creating new media tools for education and teaching purposes. Moodle is inferior to the dedicated course Natural Resource Management (called in this paper: Best practice) in terms of tools, scope of on-line solutions for immediate feedback without involving a teacher.

Table 1. Comparison of on-line tools for e-learning at faculties of the BUT and UiB

Categorisation /specification	Faculty of Management (BUT, Poland)	Faculty of Social Sciences (UiB, Norway)
Software	USOS, Moodle	My Space, Dedicated software for e-learning courses
Description	Non-integrated with USOS and other university database	Integrated with dedicated university database My Space
Tools	Schedules, teaching materials and lectures, corresponding with students via sending e-mails, quiz	Schedules, teaching materials and lectures, corresponding with students on-line courses, video, animation, special programs, quiz, simulations
Users	Academics and students from the faculty	Academics and students from the faculty, external students and professionals
Support	Lync (in progres)	Skype (in official)
Main advantage	Access to materials for the subject, communication	E-larning study and participation in exams
Teacher	Subject: Knowledge management, Andrzej Pawluczuk	On-line course: Natural Resources Management, Erling Moxnes, Birgit Kopainsky, Stephen Alessi

Source: Based on experience; [www3]; teaching materials, description of the Natural Resources Management course.

Conclusions

As the tools and models for on-line education develop and gain wider acceptance, they have growing influence on other forms of education, including residential classroom-based instruction. Higher education faces a range of well-known challenges, and on-line learning is likely to provide some of the solutions over the coming years. Today colleges and universities have the opportunity to

try out some of these solutions on a small scale, to see and measure the results, and to work judiciously to apply those programs in the areas that could stand to benefit the most of them. The innovations of on-line learning have the potential to provide considerable enhancements to traditional face-to-face learning, as well as to hybrid environments. Lessons learned from early endeavours will guide future ideas and applications, enabling a more customised, sustainable model for higher education. The presented IT tools from two mentioned faculties show, that the level and scope could differ. Special dedicated programs like Mobility Project for Higher Education financed by EEA Grants or other academic activities such a conference presentations and papers, could spread best practice and reduce a gap, to accelerate an exchange of good practice.

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- [www2] <http://www.moodle.pb.edu.pl/moodle/> (access: 19.05.2015).
- [www3] <https://www.youtube.com/watch?v=3jtt5AKyVR8> (access: 19.05.2015).

New media implementation in the contemporary education process

Katarzyna Bilińska-Reformat & Anna Dewalska-Opitek

Introduction

Development of new technologies influences all economy sectors. Changes brought by development of new technologies can be observed in the sphere of educational services. Growing scale of their application in educational processes results from changing demands of target markets (they are mostly represented by representatives of the so-called “Generation Z”, the people for whom the use of new technologies is an obvious thing), and is associated with the wish to achieve competitive advantage through creation of attractive educational services with the use of new media.

Selected new media used in educational processes are research objects in the study. Analyses included in the paper concern the years between 2009 and 2014 that were the period of unstable economy development (time range).

The following goals of cognitive and descriptive character are assumed in the paper:

- 1) The cognitive goal of proposed paper is to identify new media used by educational organisations in developing their offer for customers;
- 2) Descriptive goal of the paper is to indicate best practices in launching new media by selected organisations.

The assumption has been made in the paper that using new media makes the educational offer more attractive for customer, which is also the reason for development of activities in new media.

The following research methods were applied for the purpose of implementation of assumed goals: critical analysis of the literature of the subject, results of own research method concerning the use of new media, and the case study method that shows the best marketing practices associated with using new media in educational process.

1. Dynamics of development of information and communication technologies as the reason for changes in educational process

Information technology (IT) is the whole range of issues, methods, measures and actions related to information processing. It is a combination of use of information technology and telecommunication, and it also includes hardware and software, as well as tools and other technologies related to information collecting, processing, transmitting, storing, securing and presenting [compare: GUS s.a.].

Continuously progressing process of globalisation is undoubtedly the reason for the development of information and communication technologies. The third wave of globalisation has resulted in extensive changes and led to the creation of the concept of „Nowa Gospodarka” (*New Economy*) [Zorska, 2004], in which information becomes the fundamental value [Zorska, 2007; Chojnicki, Czyż 2006]. The new economy is a group of new phenomena, processes as well as economic, financial and cultural relationships based on new information technologies and automation (computer, Internet, mobile phone), etc.

New economy is:

- 1) informational – it is based on the ability to generate process and commercialise information;
- 2) global – it performs activities on a global scale;
- 3) network-based – it operates in integrated systems of networks that link many different participants.

The third wave of globalisation is the era of knowledge and information. Acceleration of technological progress at concurrent globalisation and involvement of almost all countries in the world economy is its characteristic feature. It should also be noted that the current consumers belong to the generation that has an everyday contact with new technologies. They are a part of their daily life. Data concerning Polish society can prove omnipresent character of technology (compare Table 1).

Table 1. Characteristics of Polish Internet users

Criteria of division of Polish Internet users	Characteristics	Number in %
1	2	3
Gender	1. Women	51
	2. Men	49
Age group	1. 15-24	24
	2. 25-39	39
	3. 40-59	31
	4. Over 60 years old	7

Table 1 cont.

1	2	3
Place of residence by the number of inhabitants	1. Cities with population over 500 000 inhabitants	13
	2. Cities with population of 200 000-499 000 inhabitants	9
	3. Cities with population of 100 000-199 000 inhabitants	8
	4. Cities with population of 20 000-99 000 inhabitants	20
	5. Cities with population up to 20 000 inhabitants	14
	6. Village	35

Source: Case study on the basis of [www1].

Internet is already used by more than 64% of Poles over 15 years of age. Currently, the network is used by 17.99 million people [www2]. In total 64.3% Poles have access to the Internet. Among them, 49% are men. The largest group is formed by people between 25 and 39 years old, followed by the group of 15 to 24 years old. People who are 60 years old and older constitute the smallest rate of Poles that use the network. In terms of size of the place they live, 35% of Internet users are rural area residents, 13% are residents of cities with a population over 500 000 inhabitants, 9% of the cities with the populations between 200 000 and 499 000 inhabitants, and 20% of cities with a population between 20 000 to 99 000 inhabitants [www1]].

Internet is a convenient tool that is applied by the users in relation with their work and private life. It is becoming a new, competitive environment of people's activity. Media that are available on the level of Network include: blogs, social networks, YouTube, Second Life and Wikipedia. With reference to educational processes they gain a new value thanks to various forms of cooperation, as well as fast and easy access to information resources.

The aforementioned media are included in the group of new media and they are referred to by an outstanding expert on contemporary media, P. Levinson, with the notion of "new new media". Major hallmarks of new media include their availability on an unprecedented scale (adjustment of the transfer offer to the rhythm of one's own life), unlimited flexibility (making decisions where and when we use data of text message and audio-visual transfer), and also social character. They provide the recipient with freedom and power, but also offer balance between consumers and producers (according to A. Toffler also referred to with the notion of prosumers). Now, everyone can create their own messages and use ideas presented in the Network by other users [Levinson, 2010, pp. 14-15].

2. Characteristics of contemporary and future customers of educational offers

The profile of contemporary customer is definitely different from customers “of the past” therefore, organisations – also those providing educational offers, need to adapt themselves to new challenges related to the characteristics of active customers.

One of the particular group of customers is the generation Y, also called “Millennium generation”, “next generation”, “digital generation” and the “generation of flip-flops and iPods”. This notion occurred for the first time in 1993, in “AD Age” magazine [Gilbert 2011].

Generation Y covers people born between the 1980’s and the year 2000. This generation has been shaped by the technological revolution that occurred throughout their youth. Generation Y grew up with technology, so they are proficient with the latest technology and gadgets such as iPhones, laptops and lately tablets (they are often referred to as “tech savvy consumers”). They have “tamed” technological innovations and actively apply digital media and digital technologies; they are considered to be audacious generation that is open to new challenges.

This has an immense impact of the way individuals of this generation communicate, study and also work. Being used to constant access to information, Millennials use various technical devices, included to M2M (machine to machine) technology. It enables an active communication between the devices (“machines”) and takes place via wireless or wired connection. M2M is usually identified with data transmission in GSM networks. M2M communication is a solution that consists in connecting devices to the outside world so that they can communicate with people and with each other. Connected devices not only provide information to their owners or third parties; they can also be controlled remotely, which provides many opportunities for their users [Höller et al., 2014].

The unquestionable advantage of the generation Y is the creativity and courage in the decision making process of the individuals. They are good at team work, open minded, and eager to share their knowledge – usually using new media and social platforms like Facebook, YouTube, LinkedIn, Twitter, Instagram or Blogosphere [Plink, 2013].

Another particular group of customers of the contemporary education organisations is the generation Z – people born after 1990, or – according to some experts – even after 1995. In the general view they are most distinguished by the fact that new technologies are something ordinary and of daily use for them as they have been present in their life since their birth. They are also often referred

to as C Generation – from the English word "Connected", meaning connected to the network. Individuals of the "Z" generation represent a realistic and materialistic approach to life, but at the same time they tend to be creative and ambitious. They want to have and achieve everything immediately. They are also distinguished by their attitude to knowledge – they acquire it from the Internet. They are aware of how quickly the world is changing, and therefore they treat knowledge as something that loses its value very fast. They are characterised by the mobility, they learn foreign languages so they have (or are supposed to have) an easy access to international information and knowledge [Rusak, 2015].

According to T. Erickson, they are the first unconscious participants in an era when everyone has access to everything, everywhere, at every time. This is the generation of mobile technology, wireless communication, and clouds of constant content. Two-third of 4-7 year olds have used iPhone or iPod, 6% of 2-5 year olds have their own smartphone (and over 50% of 11 year olds), 88% of 6-8 year olds use Internet to play games or to do homework, youngsters aged 11 to 14 spend, on average, 73 minutes a day texting, due to their strong preference for texting over talking. What is also important, the generation Z is media multitasking, using even up to 3 different media at the same time [Erickson, 2012].

Due to the fact, that the beneficiaries (customers) of education are youngsters belonging to the generations Y and Z, the implementation of new media in education process is an unavoidable necessity that does and will influence its effectiveness.

3. New media implementation in the education process – empirical approach

In order to examine emerging technologies and their potential impact on and use in teaching, learning, and creative inquiry within the environment of higher education, the research was conducted based on Delphi method, designed as a group communication process which aims to achieve a convergence of opinion on a specific real-world issue. The panel was composed of 53 international experts in education, technology and other fields from 13 countries. Despite their diversity of backgrounds and experience, they shared a consensus view technologies are going to have a significant impact on the practice of higher education around the globe over the next five years. The research was conducted in the Fall of 2013 [NMC Horizon Report, 2014].

According to the international experts, there are main six trends discovered during the Delphi process. They are presented in the Table 2.

Table 2. Key trends accelerating higher education technology adoption

A. Fast trend: Driving Changes in higher education over the next two years: 1. Growing ubiquity of social media. 2. Integration of online, hybrid and collaborative learning
B. Mid-range trends: Those that are understood and known how to solve 3. Rise of data-driven learning and assessment. 4. Shift from students as consumers to students as creators
C. Long-range trends: Driving changes in education in five or more years 5. Agile approaches to change. 6. Evolution of learning

Source: [NMC Horizon Report: 2014].

Each of the six trends identified by the expert panel has numerous implications for teaching and learning practice. What may be noticed, is that new media is the key driver of the education process in short, mid and long term.

Social media has changed the way people interact, present ideas and information, and judge the quality of content and contributions. More than 2 bn people use social media according to a recent report by WeAreSocial [2015]. The top 25 social media platforms worldwide share over 6 bn accounts among them. Educators, students, alumni, and the general public routinely use social media to share news about scientific and other developments. The impact of these changes in scholarly communication and on the credibility of information remains to be seen, but it is clear that social media has found significant traction in almost every education sector.

For educational institutions, social media enables two-way dialogues between students, prospective students, educators, and the institution that are less formal than with other media. As social networks continue to flourish, educators are using them as professional communities of practice, as learning communities, and as a platform to share interesting stories about topics students are studying in class. Understanding how social media can be leveraged for social learning is a key skill for teachers, and teacher training programs are increasingly being expected to include this skill.

The use of Internet as a new medium has created the basics for new forms of education, which are e-learning / online learning (conducted mainly on-line) or hybrid learning / blended learning (conducted both face-to-face and online, enable students to travel to campus for some activities, while using the network for others, taking advantage of the best of both environments). The usage of the natural preference of the youngsters to be connected, education institutions are accessible to a large number of students than traditional courses. Also online environments incorporated to traditional courses make the content more dynamic, flexible and interesting for students.

As students participate in online activities, they leave an increasingly clear trail of analytics data to recognise challenges early, improve students' outcomes, and personalise the learning experience. Data mining may be used in the form of Student Success System (S3) that provides a holistic, analytical view of student academic progress. Up to date results have provided methods for tackling infrastructure changes, documenting issues and concerns, and identifying areas for improvement for future iterations at universities that had implemented the system [Essa, Ayad, 2012, pp. 58-59].

New media shift students from consumers – recipients of education services to creators involved in the process. Due to solutions shared amongst a group of student like: fabrication labs (equipped with advanced tools, like laser cutters, microcontrollers or 3D printers available) business labs (using the idea of co-working space), it is possible to develop students creativity. It is not only possible to study business, but run a start-up simultaneously. Many of those start-up businesses are continued after graduation from college or university.

In October 2013, the U.S. Department of Commerce published a report entitled The Innovative and Entrepreneurial University, which highlighted the ways in which universities are nurturing entrepreneurship within their infrastructure and teaching practices. Their research revealed a growing emphasis on both formal and informal programs that build students' interests in solving social and global problems, creating products, and contributing content to help existing businesses. This global trend is also present in Poland. In January 2015 the estimated number of start-ups in Poland reached 1500. It is predicted that in five years the number may be doubled. The main areas for start-up projects are M2M technologies, medical services, e-commerce and its mobile version – m-commerce, games for education. Students are provided with the seed capital funds, venture capital funds as well as AIP Seed Capital, which ensure good start for their business projects [www3].

All the described trends lead to the inevitable change of the education process. What is predicted as a long-term trend is the digitalisation of education that may be seen in teaching methods (e-learning, blended learning, online lectures, MOOCs, etc.), and tools (internet/extranet platforms and labs, social media, mobile apps for iPhones, smartphones, online libraries, etc.). One of the most interesting ideas discovered as a new media implementation within the presented trends is gamification, or the notion that gaming mechanics can be applied to routine activities, has been employed successfully by a number of mobile apps and social media companies (i.e. World Bank or IBM). For higher education, these game-like environments transform assignments into exciting challenges,

reward students for dedication and efficiency, and offer a space for leaders to naturally emerge. Badges, for example, are being increasingly used as a rewards system for learners, allowing them, in many cases, to publicly display their progress and skill mastery in online profiles [NMC Horizon Report, 2014].

Another futuristic idea is a virtual assistant that employ artificial intelligence and natural language processing to provide people with support for a wide range of daily activities, such as discerning the best driving routes, arranging trip itineraries, and organising email inboxes. The latest tablets, smart TVs and smartphones now include virtual assistants – perhaps the most recognised of which are Apple’s Siri, Android’s Jelly Bean, and Google Now. These virtual assistants are integrated into the mobile platforms, enabling users to interact more authentically with their devices by leveraging a conversational interface. Users can simply speak a request to the device, and the virtual assistant will respond instantly. The most advanced versions of this software actually track user preferences and patterns so they can adapt over time to be more helpful to the individual. Virtual assistants may be also used in higher education, the prospect of tools that adapt to students’ learning needs and preferences makes the technology one worth following closely over the next five years [NMC Horizon Report, 2014].

Conclusions

What may be observed is that higher education sector has recently reached a critical point, where it must include innovation in the education process. Young people, present and future students represent specific generations – Y and Z, which have turned to the Internet to acquire information, news and assimilate knowledge. Social media, mobile apps, Internet platforms and labs are only examples of new media used by young students to communicate, so it is necessary for institutions on each level of education, especially colleges and universities, to respond to the discernible change, otherwise even longstanding institutions may fail because they ignored how technology may influence their audience.

An American futurist, M. Kaku, has concluded that: “In any activity there are winners and losers. The winners will likely be those [...] which fully grasp the vital importance of a scientific revolution. Those who would scoff at the power of the revolution may find themselves marginalized in the global marketplace of the twenty-first century” [1999, pp. 13-14].

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Application of new media in financial education on the example of project implemented by NBP (National Bank of Poland)

Małgorzata Kieźel

Introduction

Financial education contributes to development of financial awareness in society, which allows for better recognition of chances and threats that are associated with typical and new financial products. Consequently, this results in making more aware decisions and formation of positive habits necessary to manage financial resources. Developing knowledge in this sphere is also supported by endeavours of entities operating in financial industry. In contemporary times it is possible mainly thanks to application of new technologies, especially innovative solutions among others. Their development allows for more efficient communication, including interactive communication. The so-called new media can set the example here.

The goal of the paper is to identify activities proving application of new media for financial education conducted by Narodowy Bank Polski (*National Bank of Poland*). In theoretical part of the paper that is an introduction to presented content, literature sources are used. On the other hand, practical part is based on secondary sources in the form of materials obtained from websites of the studied entity. Critical analysis of collected material is performed and the method of case research is applied.

1. New media and e-learning in the context of application of new technologies in the process of education

New technologies explicitly facilitate acquiring information and communicating. It is hard to imagine functioning of contemporary enterprises and organisations without using the Internet. For many of them Internet is becoming even a fundamental medium applied in performing their activity (e.g. internet banks or online shops).

Together with technological progress, particularly development of information technologies (ICT), not only technologies of creation, making accessible and delivering information have changed, but also teaching methods that are applied as well as approach to educational processes and results. Internet is increasingly more often applied to facilitate organisation of the teaching process either by higher education institutions (universities, colleges) or other entities involved in educational processes. The role of new technologies as an important element facilitating the process of education within the system of education has been emphasised by many researchers [Ishizuka, 2011]. Their application is supported by their usability and effectiveness that are observed both by the learners and teachers [Liaw, Huang, Chen, 2007, pp.1066-1080].

The so-called new media, that is, analogous media, converted to digital form are more and more often applied [Manovich, 2006, pp. 119-120]. They are micro-electronic devices, mainly personal computers with popular software that allow for accessing various e-services via Internet. Taking into consideration technological development, new media are located within the so-called Toffler third wave, where after the stage of functioning that is more or less independent of others, media joined together and united [Toffler, 2003, pp. 478-480].

Several features that have impact on the process of reception of information are typical of them [Jędrzyckowski, 2006, p. 14]. Multimedia character that is expressed in integration of available forms of transfer presented as text as well as static and graphic image, film and sound is one of those features. Other characteristics include communicativeness that consists in fast information exchange between users, and hypertext nature associated with matching content by means of logical relations, which allows for uninterrupted transmission of information associated with each other. Interactivity, representing the ability to receive information with simultaneous interaction is the fourth, very important feature. It also ought to be indicated that for new media it is also typical that they enable simultaneous message communication (one to one), spreading communication (one to many) and universal communication (many to many) [Jakubowicz, 2008, p. 75].

Access to the Internet and new mobile devices is consistent with application of the theory of connectivism. It fits well with possibilities offered by digital era. This theory assumes that decisions are made on the basis of definite resource of information that is constantly changing. Due to the fact that it is still joined by new information, distinguishing what is important and what is not, is the key competence. Realising when new information essentially changes grounds on which we have just made a decision is equally important. Therefore „know-where” as the key for the searched knowledge resource becomes an element prevailing over „know-how” and „know-what” [Konektywizm.... , 2010].

E-learning is an expression of the use of new technologies in education. This area of education and offering knowledge may take various forms that are different with respect to functional and technical possibilities and consequently effectiveness of the process of learning (blended learning, m-learning, rapid learning). Applications and processes that serve supplying educational material in an electronic form with the use of such media can be indicated within e-learning. They include Internet, intranet, television, data storage media (CD/DVD), mobile devices and computer equipment [Brzostek-Pawłowska, 2004, p. 15]. Immediate reaction of achieved learning results is an essential advantage of e-learning [Davis, Wong, 2007, pp. 97-126]. Additionally thanks to new solutions it is possible to connect the e-learning platform with social networking portals. This stimulates flow and transfer of information between e-course participants and creates new possibilities for them to place such materials as messages (posts), videos, links or photos in a new environment.

2. Financial education and its importance

Financial education is a process within which consumers expand their understanding of financial products, notions and financial risk through obtained information, instructions and/or advice. This enables them to make more aware choices and undertake activities aiming at improvement of financial situation, and also facilitates searching for information and possible assistance [Improving Financial Literacy..., 2005, p. 4]. According to the definition by the Network on Financial Education (INFE), a team for financial education operating within OECD, financial education is a combination of awareness, knowledge, skills, attitudes and behaviours necessary to make financial decisions, and leading to attainment of individual financial prosperity [Measuring Financial Literacy..., 2011, p. 3].

Financial education constitutes complementing legislation means that serve providing consumers with appropriate information and adequate consultancy, and also its suitable protection. Within this education its three major directions can be distinguished [Briefing Paper Compendium..., 2009, p. 24]:

- financial knowledge and customer's understanding of various forms of use of money and its function (e.g. cash, credits, loans),
- financial skills and competences based on possessed knowledge that influence disbursement of resources and saving,
- responsibility – customers' awareness that financial decisions made by them influence others, for example family members.

Thanks to financial education financial awareness of consumers grows. This facilitates appropriate management of incomes, contributes to development of the culture of saving, shapes investment habits, emphasises the importance of financial planning and allows for comparison of offers of financial products for optimisation of choice of the option that is most adjusted to individual needs.

Currently the importance of appropriate financial education is growing due to dynamic development of financial services. Banks offer increasingly broader range of products, often personalised and based on new information and communication technologies. Furthermore, the following elements contribute to growth in access to this offer: technological progress, development of electronic supply channels and integration of financial markets. As a result of these changes, complexity of offered products and services is increasing. At the same time lack of knowledge about innovative products is observed among a part of customers. This may constitute an obstacle for their use. The lack of knowledge in the sphere of finances intensifies the feeling of threat and uncertainty among customers of banks. This is why education in these spheres of knowledge is so important.

Consumer who has appropriate knowledge is aware of the possibilities offered by financial market. This, in turn, may translate into larger demand on more complicated and innovative products that come from this industry. Appropriate level of knowledge also contributes to growth of trust in modern, electronic distribution channels. For consumers it is also important that a suitable level of education reduces asymmetry of information between suppliers of financial services and their customers, and may be approached as a factor that is complementing towards regulations that guarantee appropriate level of protection and responsible behaviour of financial institutions.

In 2005 OECD recommended promoting creation of financial awareness based on reliable information and guidelines through effective implementation of coordinated educational programs. According to OECD financial education ought to be actively supported and available in a continuous way on all stages of life. Programs of financial education should be adjusted to specific needs of people who use them, which requires conducting research before, for the purpose of identification of current state of knowledge of citizens. Access to programs ought to be easy and consumers should have a chance to acquire knowledge on economic and financial subjects as early as possible. Knowledge in the sphere of finances provided by entities offering financial services ought to be made available in a fair, transparent and unbiased way. Compliance with consumers' interests is also significant. To achieve a clear division of tasks, to facilitate exchange of experiences and to use available resources in a reasonable way, coordination

of this process should also be supported on national level. On the other hand, for the purpose of sharing the best practices it is also important to improve international cooperation between entities offering projects of financial education [Improving Financial..., 2005, p. 4].

Due to dynamic changes occurring in this area, financial education ought to be provided by financial institutions that have this type of projects included in their strategies. National strategy of financial education has also been defined as “co-ordinated approach, on a national level, to the issue of financial education that is composed of adjusted framework or program” [Laboul, 2012, p. 11].

3. Project of Narodowy Bank Polski (*National Bank of Poland*)

Educational programs of NBP (*National Bank of Poland*) are an example of activity that applies new media. They are aimed at students at junior high schools and high schools, at university students and also at people who, because of performed function or practised profession, transfer the knowledge to others, e.g. teachers, lecturers and journalists. A large number of these projects are directed towards the whole society because universal economic education is an important goal of educational activities of NBP.

Undertaking educational actions is an important element of mission of NBP as the central bank supporting economic development of the state. These are actions aiming at diffusion of knowledge about the principles of functioning of financial market, stimulation of entrepreneurship attitudes, shaping responsibility while making financial decisions, increasing the level of knowledge about economic issues, popularisation of knowledge about economic national heritage and promoting modern attitudes that influence for example shaping the social capital [www1].

NBP implements the aforementioned goals through the following, among others:

- development of, and support for educational project concerning economic subject area aimed at various groups of recipients, particularly at school and university environments, leaders of public opinion and environments threatened by financial exclusion;
- equalisation of educational chances of young people studying at economic faculties thanks to scholarship programs;
- expanded publishing activity;
- generally accessible activity of Centralna Biblioteka NBP (*Central Library of National Bank of Poland*), one of the best supplied Polish scientific libraries of economic profile.

Popularisation of economic knowledge and strengthening of the leading position in educational activity already occurred as one of six goals in “Plan of Activity of the National Bank of Poland for 2007-2009” [Plan of Activity of National Bank..., 2007, p. 8]. The issues of financial education in activities of NBP was also reflected in assumptions of “Strategy of economic education of National Bank of Poland for 2011-2012” that has still been continued [Strategy of education..., 2010, p. 6].

NBP presents its broad educational offer designed as based on new, multimedia and interactive tools, through Portal Edukacji Ekonomicznej NBPortal (*Portal of Economic Education NBPortal*). It is an expanded platform that is developed considering the needs and expectations of students of junior high schools, high schools, university students, teachers and grown up people who want to improve their knowledge about economic and participate in economic life in an aware way. The users in the Knowledge section can get knowledge about:

- papers, explaining economic issues, both with respect to current situation and also concerning timeless issues and theory;
- multimedia presentations that discuss economic knowledge in an easy and friendly way;
- reviews of the latest books of educational character;
- information about numismatics for beginners and experienced collectors;
- news about current educational events, economic contests and conferences.

In this section special SpotOn application is also available. It is a unique magazine prepared by ObserwatorFinansowy.pl service operating at NBP. Author’s publications of Polish and foreign economists and journalists are placed on its columns. SpotOn application can be downloaded on mobile devices on Apple Store or Google Play websites, or their editions can be read on desktop computer.

In the section Didactics, teachers of junior high schools and high schools can join Klub Przedsiębiorczych Nauczycieli IMPULS (*Club of Entrepreneurial Teachers IMPULS*), get acquainted with lesson worksheets and enter iPrzedsiębiorczość (*iEntrepreneurship*) portal where there a series of lessons about the rudiments of entrepreneurship can be found. Apart from real examples untypical tasks and quiz tests are placed there.

In education section NBPortal, there is information about possibilities of obtaining subsidies for educational program from Narodowy Bank Polski, a list of educational initiatives supported by NBP the aim of which is to diffuse economic knowledge in society and information about finished projects or results of research conducted by Department of Education and Publishing of National Bank of Poland and review resources of the Central Library of the National Bank of Poland.

NBPPortal also has Entertainment section where it is possible to play multimedia games, solve multimedia crossword puzzles or get to know the comics produced on the basis of worksheets prepared by students that are members of Szkolne Kluby Przedsiębiorczości (*School Clubs of Entrepreneurship*). Animated cartoons that discuss economic issues in humorous and easy to understand way can also be found there. Popularity of the portal is proved by the fact that in 2013 NBPPortal was visited by 670 753 users, around 10 500 new accounts were opened and 1855 people finished e-learning courses. Journalist part was also expanded [Annual Report of NBP, 2013, p. 95].

Sławomir Skrzypek Money Centre of NBP is another educational agency the opening of which is planned for March 2016. It is to combine classical forms of display with interactive multimedia solutions. Its mission is to diffuse knowledge about the role of money against the background of economic history of Poland and the world, to show the way financial mechanisms, payment systems and central banks work in economy. Educational offer of the Money Centre will be adjusted to various groups of recipients, particularly to young people from junior high schools, high schools and universities or colleges.

Akademia „Dostępne Finanse” (*Academy “Available Finances”*) is another educational initiative of Narodowy Bank Polski. Its goal is to increase the awareness among Polish people on the subject of profits and possibilities arising from having a bank account and active use of payment instruments such as debit cards and electronic banking. The Academy is a project implemented in 16 regional branches of NBP in cooperation with Departament Systemu Płatniczego (*Department of Payment System*), Departament Komunikacji i Promocji (*Department of Communication and Promotion*) and Departament Edukacji i Wydawnictw NBP (*Department of Education and Publications of National Bank of Poland*). The task of NBP branches is to reach and start cooperation with Ambassadors of non-cash transactions. They are leaders in local communities, who, while using their knowledge, authority and involvement, will directly promote the ideas of the project and knowledge concerning non-cash transactions in the region environments. The project Akademia „Dostępne Finanse” has been planned for the years 2012-2016. Educational meetings with participation of Ambassadors, accompanied by actions promoting non-cash transactions will be organised in this period.

NBP also presents a series of actions with the use of Internet. For example, in 2013 streaming with simultaneous translation and RPP press conferences and international conferences organised by NBP was continued. The website concerning the project *NBP does not exclude*, was also started. It contains information in sign language, films with audio description for people with sight dysfunc-

tion and information for mentally disabled people in the format comprehensible for them. Cooperation with university circles was continued. A contest for students of economics entitled “*If it depended on me...*” and environment of economic experts was organised. In 2013 NBP website was visited by 1.7 million users every month.

Conclusions

Conducting complex educational activities, aiming at diffusion of knowledge and also shaping the awareness of Polish people as customers of financial institutions is important for shaping society that is economically and financially aware. Currently, to level differences in the access to knowledge and information, including development of financial education, more and more frequently new media, particularly Internet, are applied. In domestic conditions within presented scope, such efforts on a large scale are undertaken by Narodowy Bank Polski. Through a new platform supported by numerous projects it contributes to development of financial awareness of Poles and shaping practical skills of management of financial resources.

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Using new media in teaching in higher education

Patryk Mączko

Introduction

To survive in the rapidly changing reality people need to follow up with the pace of these changes. This challenge is an interdisciplinary dimension, and one of the areas that did not escape the changes is education. It is crucial that the implementation of innovative solutions for teaching is not indifferent to our adaptability to today's world. The aim of this work is to show opportunity and encourage professors to implement new media into teaching to provide students with most up to date information.

The solution that is successfully used is the e-learning platform Moodle (Modular Object Oriented Distance Learning Environment). This tool is supporting e-learning and can be used both as a complement to traditional activities, but also for conducting online classes. The teaching style based on tools for e-learning fits into the trend of social constructivism, according to which the student is an entity actively involved in the learning process and influencing its development. The platform allows conducting discussions, the contact with the lecturer, file uploading (sending and evaluate homework), but also management activities, etc. From the point of view of the creator of the course, Moodle is a tool for simple and intuitive, modular operating mode. In turn, the students appreciate the platform that they can reach the content they need at any time. Additionally in today's world of globalisation and internationalisation it also helps universities to provide service to people from around the world.

Furthermore, a new generation is living in the digital world, and they are bored of the traditional way of studying that's why undivided role, is also played by social networks. Virtual organisation and association, among others, allow the creation of scientific groups to develop the school as scientific circles, where there is room for discussions and posting materials. In this last aspect, students take advantage of the opportunities offered by, e.g., Google or Office 365 and tools called Disk or cloud. There students can upload, create and share files in a particular word processor, spreadsheet and tool to create presentations. One of

the advantages of this tool is the ability to simultaneously and seamlessly work on it many people, where changes made by any person are seen in real time by all people accessing the file.

1. E-learning platforms

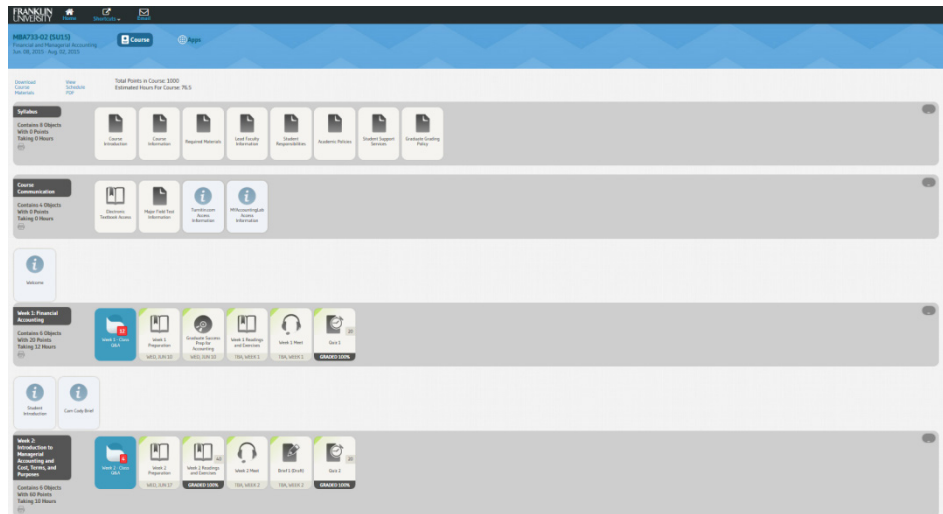
Nowadays universities are facing challenges connected with demographic decline, each student who is attracted to study brings money from the ministry of education. However, how universities can attract and provide a high quality of learning in today's fast changing the world. One of the most interesting and most valuable tools are e-learning platforms. This tool allows the student to have contact with the professor via the Internet and to see their upcoming assignments or check or review the old ones they have already made in just a few seconds. By learning platforms universities can cooperate with tutors from any country of the world this gives schools unlimited access to opportunities to develop quality and innovation in teaching. As an example, I would like to introduce e-learning platform used by Franklin University in Ohio to teach students worldwide on Master Business in Administration program.

1.1. Franklin University in Ohio e-learning platform

Franklin University is using e-learning platform for more than five years, the platform is mostly used for international students, however, it is also used by national students. In the Figure 1 we can see the main page of the platform that is divided in few lines of buttons. All of the buttons are grouped in parts that are connected to each other. Additionally there is "Apps" button that links students to see their statistical performance evaluation as well as their co-students. Students can check how they are doing comparing to others, but there are no private data shown. At this page, they also have the availability of meeting online with other from group or professor by a tool similar to Skype, but based on Adobe Connect program.

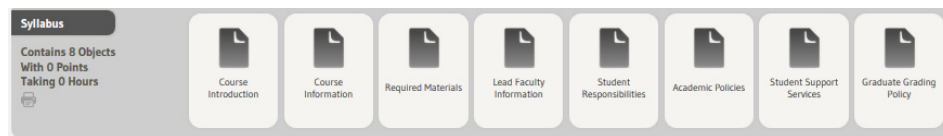
At the top of the page, there is always syllabus of the module (Figure 2). Here students can read about theirs and teacher's responsibilities, rules to obey, grading policy, course introduction, and information so basically everything they should read and know before starting a new module with a new professor. In this part tutors can also provide extra information about their course.

Figure 1. Franklin University Ohio e-learning platform



Source: [www9].

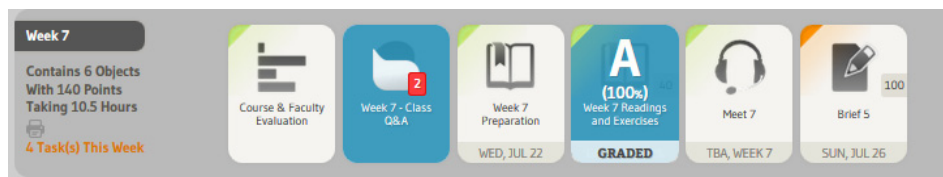
Figure 2. Franklin University Ohio e-learning platform



Source: [www9].

Furthermore, in the Figure 3 we can see an example how user-friendly is this platform, each button has marked in left top corner, orange or green. If it flashes, orange student knows that he has not done this part yet and at the bottom of a button he see the date of the deadline of each exercise. If any of the buttons has a number, it means that this exercise will be graded. After evaluation of their work and getting a note from their tutor button will change colour to blue and will show his or hers mark. It is very hard to miss it then.

Figure 3. Franklin University Ohio e-learning platform

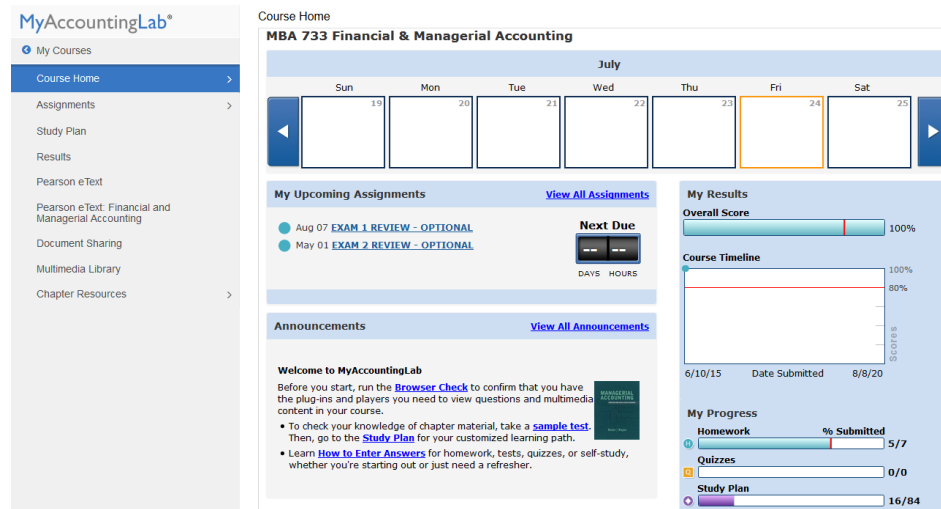


Source: [www9].

1.2. Pearson Education e-learning platform

Moreover, Franklin University in Ohio has created something more than just a basic e-learning platform. With Pearson Education, they created an additional tool that help professors to teach their students more efficiently and successfully. This tool that we can see in the Figure 4 (below), gives students access to e-books which are provided by University, so nobody has to buy or wait for a book in the library.

Figure 4. Pearson Education e-learning platform



Source: [www2].

Only problem is that students cannot print the book in whole; it is only available to print page by page. Another point is that e-book is faster to work on. If students are looking for some problem, case or any other thing, they just type in the word or text, and they found it. Besides the textbook, Pearson Education offers one more tool called MathXL which is shown in Figure 5. This program is used for modules connected with math, finance or accounting. It is supposed to provide the in-class effectiveness of studying such modules online. When students are doing homework on this platform, they have three attempts to do it properly. Students can also contact their tutor or use “help me solve this” tool that clarifies them how to do it and why. It also gives pages of the book where they can study about this problem.

Figure 5. MathXL Pearson Education e-learning platform

Exercise Score: 10 of 10 pts **Assignment Score:** 100% (40 of 40 pts) **4 of 4 complete**

The Medal Plus Company manufactures medals for winners of athletic events and other contests. Its manufacturing plant has the capacity to produce 12,000 medals each month. Current production and sales are 10,000 medals per month. The company normally charges \$300 per medal. Cost information for the current activity level is as follows:

(Click the icon to view the cost information.)

Medal Plus has just received a special one-time-only special order for 2,000 medals at \$250 per medal. Accepting the special order would not affect the company's regular business. Medal Plus makes medals for its existing customers in batch sizes of 50 medals (200 batches x 50 medals per batch = 10,000 medals). The special order requires Medal Plus to make the medals in 40 batches of 50 each.

Read the [requirements](#).

Requirement 1. Should Medal Plus accept this special order? Show your calculations.

Begin by completing an analysis, and start by showing the computation of the company's operating income without the special order. Next, calculate operating income with the special order, and then calculate the differences between the two columns. (For amounts with no change, make sure to enter "0" in the appropriate cells of the Difference column.)

	Without One-Time Only Special Order 10,000 Units	With One-Time Only Special Order 12,000 Units	Difference 2,000 Units
Revenues	\$ 3,000,000	\$ 3,500,000	\$ 500,000
Variable costs:			
Direct materials	\$ 600,000	\$ 720,000	\$ 120,000
Direct manufacturing labor	450,000	540,000	90,000
Batch manufacturing costs	200,000	260,000	60,000

Question is complete.

Source: [www5].

1.3. Pros and cons of e-learning

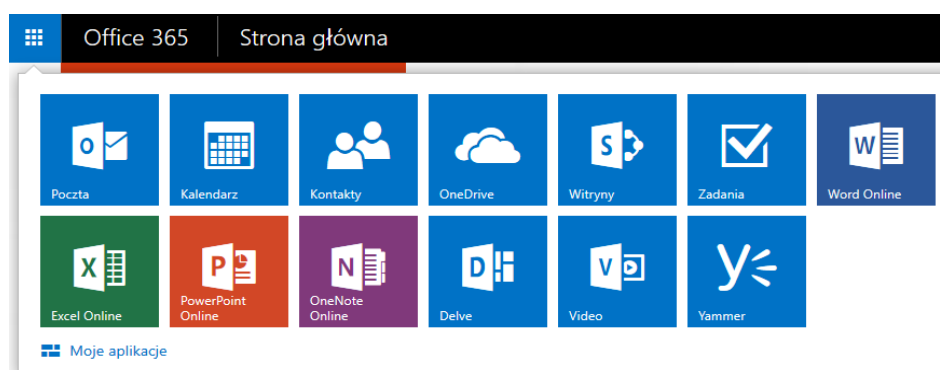
Although many people consider the traditional way of studying as the best way to get knowledge and diploma, however, e-learning is an excellent alternative. First of all students choose a time and place where they want to study, additionally such way of studying boosts their self-motivation and time management. Another advantage is that students can choose university or course from every location with the best teachers, and can do it at home. Furthermore, a distant learner can attend few classes at one time it just depends on his or hers free time. No, to mention the money that is saved due to no need to travel or drive to university or rent flat in other sometimes more expensive place to live.

On the other side, e-learning has some disadvantages, in the first place in e-learning people have reduced social and cultural interaction, mostly people never talk to each other. Another point is technology issues, some people do not like to interact only with the computer they prefer to read an ordinary book not only an e-book. Sometimes courses can not cope with thousand people trying to join it and discuss, even if we take a small group of individuals who want to use Skype to exchange ideas between each other it is very hard to communicate without interruption.

2. Office 365 a new media in higher education

Higher education institution had problems with offering free of charge tools for students until Microsoft announced free of charge cloud-based productivity and collaboration platform shown below in Figure 6.

Figure 6. Office 365 online platform



Source: [www8].

This program consists of:

- Excel online;
- Word online;
- PowerPoint online;
- OneNote online;
- OneDrive.

And is one of the most complex program available for students. Office can support in class as well as distance learning. Students can work on one paper simultaneously online, and all of them can see live what each person is changing or typing. Students can also use the cloud to store their work, exams, presentations, etc. which allow them to find what they need very easy not wasting even a minute to find it [www6].

3. Social networking, a future in studying?

Social media are becoming more and more popular every year; a growing phenomenon refers to applications that are web-based or are mobile like Facebook, Twitter, etc. [www3]. SMT has become an essential part of people lives, every day they spend hours posting information on Twitter or uploading information to Facebook. Smartphone's which provide 24/7 contact with the internet allow people to spent every few minute online. If people are so connected to being

online why the professor should not use as leverage to encourage students to use social media to study or participate in classes? For example one of the most famous universities, Harvard has more than four millions of “likes” and is head of calls when it comes to using social media to connect with students. Additionally, Prof. Reynol Junco researched that students using Facebook for pleasure were less involved in campus activities however students who used social media to comment or respond to the events were much more engaged which increased their academic performance [www7]. Encouraging student to take part in classes through social media is much more cost-effective and more comfortable for student, also using this media allow students to collaborate more freely for example students can post comments on class projects, exchange knowledge they gathered for overall better performance. Additionally, tutors should use YouTube to provide necessary information in a new modern way that is much easier to spread among students. Traditional learning often teaches us how to do something on our own, nowadays companies are looking for employees who can collaborate with others immediately. Tutors can use social media to prepare future employees how to work with each other. Teachers should treat social media as an opportunity to be more efficient and to create more meaningful lectures for students using social media where they spend a lot of time can boost overall performance and allow students to learn more efficiently.

4. Mobile learning in higher education

Our lives are currently based on everyday usage of the Internet; companies are providing technology that allows to be connected everywhere anytime. The current trend is showing that mobile and wearable technology are most preferable for users [NMC Horizon Report 2015 pp. 42-44]. Mobile devices are deeply engrained in everyday lives; people are using it from reading a post on Facebook to use a navigation to get to next place we want. That’s why some Universities are introducing mLearning as a new media high personalised tool to teach. One of the Universities that have implemented mLearning successfully is the University of Michigan in animal training classes. Mobile learning is a tool that allows students to take short micro-lessons when they have free time instead of wasting it on surfing the Internet. It needs to be concise and to the point because no one is willing to read long texts from Smartphone screen. Good mLearning content should be packed into 3-10 minutes lessons with the addition of images, charts or short videos. This way of studying gives us heads up in a world of fast knowledge we live in. Creativity and innovation that is implemented every day shows us that what we learned a year ago maybe out-

dated in following year. Mlearning gives availability for universities and students to get knowledge in more informal, flexible way then by classic way or even by e-learning. Additionally grading is based more on performance and improvement rather than on benchmarking. In the table below are presented main differences between e-learning and mLearning.

Table 1. Key differences between mLearning and e-learning

Specification	mLearning	e-Learning
Main Objective	Knowledge distribution application, “just-in-time” and “just-for-me”	Knowledge presentation “just-in-case”
Approach	Flexible	Formal structure
Content Type	Concise, broken into micro lessons, search enabled for particular knowledge when needed	Comprehensive covering all concepts, principals, and processes. Follows a linear process that does not allow to skip chapter or module
Typical Content	Discussion forums	Slides, videos, quizzes, case studies
Grading	Performance and improvement based	Benchmarking
Devices	Mobile devices	Laptop, tablet
User Access	Anywhere, anytime	Anywhere anytime, but static environment is needed
Time Spent	3-10 minutes	20 minutes – 2 hour

Source: [www1].

Mobile learning will become more and more popular in the modern world because it allows students to save time and gather the knowledge needed just before meeting they are going to attend or exam they will try to pass. In the age of huge information blunder and enormous data which people process everyday mobile learning may be a solution for professors who do not want to be outdated with their teaching courses.

Conclusions

Online Learning is seen as a viable alternative to some traditional forms of learning. e-Learning, which is flexible, easily accessible and integrated with sophisticated multimedia technologies is becoming more common. According to members of the study voice or video tools not only increase the number of interactive activities between online instructors and students but also to improve quality. Networked learning will lead to the development of online courses, which will replace and will supplement traditional ones. According to research Babson Survey Research Group published the beginning of 2013 years more than 6.7 million students, or in other words: 32% of all college students in the United States participated in at least one online course. A trend that is growing all the

time and is becoming more popular and demanded. It is important to perceive social media as something that is not temporary, and should be used productively, rather than devalued in schools. Professors should allow students to use social media and technological availabilities and treat it as a useful tool rather than a distraction. Universities should follow up a trend and introduce courses that would face and fulfill the need of society. However, tutors should encourage students to cooperate with each other not only by the internet but also by face to face meetings [www4].

Summarising, in my opinion I would recommend Universities and professors to implement new media into higher education. All new media are giving opportunity for both sides to cooperate better and to educate in the more personalised way. If some people do not prefer to use all new technology developments they should only use the ones they fit best to their needs otherwise they may lose potential students who will choose another way of studying, matching better with their needs.

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New media as a recruitment tool in the higher education decision process. A case study

Ionela Mocan (Maniu) & George C. Maniu

Introduction

This paper investigate the various source of information or channels that prospective students consult/use in selecting an higher education institution, the level of importance students attach to different media recruiting methods: traditional media (brochures, news, magazines, radio, TV,) vs. new media (web, social media). The paper also analyse if there are significant differences among respondents demographics, academic backgrounds on source of information used. It is based on a 2014 survey of admitted students at a Romanian central region University, in which students may choose more than one source of information. The data analysis including descriptive statistics, Factor Analysis, Multiple Response Analysis, ANOVA, was conducted on the data using SPSS software package for Windows. The results reveal that: websites are the first important source of information and the most trust worth from the higher education decision process.

Higher education decision making process has been an issue of interest in recent research papers, journal issues, conferences topics. Central themes in this area are: factors that influence students to enroll [Gray, Daugherty, 2004], students' satisfaction [Anghel, Orindaru, 2014], tuition fees [Vossensteyn, 2005],[Wilkins, Shams, Hiusman, 2013], the impact of social media on study selection and university choice [Constantinides, Zinck, 2013; Karcher, 2011], as instrument of marketing [Constantinides, Zinck Stagno, 2011], etc. This research presents the results of a study aiming to investigate the role and importance of various sources of information or media recruitment methods (traditional media / new media) that newest generation of prospective students consult/use in selecting a higher education institution (HEI).

1. New media

Techencyclopedia's [www1] new media definition: The forms of communicating in the digital world, which includes electronic publishing on CD-ROM, DVD, digital television and, most significantly, the Internet. It implies the use of desktop and portable computers as well as wireless, handheld devices.

New media features (interaction, communication, user engagement, user generated content) and the high adaptation rate of new media make attractive its use in public and business, particularly in higher education as marketing strategies: recruitment tool, communication, better informed decision, etc. This study seeks to gain insights regarding the impact and usefulness of the traditional and new media for recruiting within HEI.

2. Case study methodology

This study population was the first year students during the 2014 first semester who were enrolled at a Romanian central region University. These students (first year) were chosen because they were most likely to remember their decision-making process. 386 students accepted to fill in a self administrated questionnaire.

3. Demographics results

First questions of the questioner asked basic information regarding gender, environment (urban/rural), department where the respondent was enrolled, high school graduation grade. This questions were designed in order to identify patterns that may exist between this aspects and media type.

Table 1. Component matrix

Factors	Items	Component		
		1	2	3
social factor	social position (licensed vs. unlicensed)	.744	.126	.041
	parents want to go to college	.699	.063	-.049
	the desire to know other people and make new friends	.567	-.002	.238
	getting a diploma in the field even if I do not think it will help me financially	.559	-.157	.168
	a faculty graduates earn more than those without a bachelor's degree	.380	.320	-.321
career	safer future / job	-.028	.766	.164
	better employment perspectives	.186	.678	-.246
	preparation for future career / job	-.074	.640	.336
personal development	personal development	.269	.046	.702
	knowledge growth	.254	-.024	.663
	interest/passion for your chosen field	-.209	.347	.604

Of the 386 total surveys, 41.7 % were male and 58.3% were female, 78.4% from urban areas and 21.6% from rural areas, high school graduation grade average by 8.25 (SD = 0.95) being greater ($t = -5.623$, $df = 360$, $p = 0.000$) for females ($M = 7.92$, $SD = 1.01$) compared with males ($M = 8.48$, $SD = 0.83$). 27.98% of respondents are enrolled in engineering department, 21.24% in sciences, 14.51% in social and human sciences, 13.21% in economics, 11.14% in letters and arts, 6.22% in medicine and 5.70% in law.

The questionnaire considered 11 items related to reasons for choosing a university. Using factor analysis the items were grouped into three factors (KMO 0.678, $p = 0.000$).

In this section of the results information sources are measured in order to determine if they were used and how effective it was if they were used. The table below shows the results of statistical analysis calculation on the information sources used by student in their decision-making process.

Table 2. Information sources used in the selection of a university

Sources	% (for 3 – useful source)	% (for 2 – less useful source)	M (SD)
brochures / leaflets	35.9	11.4	1.83(0.92)
advertising boards	19.2	14	1.52(0.79)
web-site	80.8	8.1	2.70(0.65)
visits to schools by university representatives	24.9	13.3	1.63(0.85)
visit to campuses	34.7	7.2	1.77(0.93)
open doors days	23.2	6.1	1.52(0.84)
friends	65.5	12.4	2.43(0.83)
current university students	57.5	8.8	2.24(0.92)
graduates students	49.3	9.1	2.08(0.95)
teachers advices	42.3	16.7	2.01(0.91)
social networks	38.7	17.1	1.94(0.91)

In terms of information sources, 80.8% from students consider web-sites as a useful source, followed by current/graduates university students (57.5%/49.3%), teachers advices (42.3%) and social networks (38.7%). Among the less useful information sources are advertising boards (14%, 42% of those who used this source), visits to schools by university representatives (13.3%, 35% of those who used this source), social networks (17.1%, 30% of those who used this source) while web-site is the most trust worth source, only 9% of those who used this source consider it less useful. Students use, in average, around six information sources.

Females are using more information sources than males (female – $M = 5.70$, $SD = 2.66$; male – $M = 6.37$, $SD = 2.51$, $p = 0.012$). They give more importance than males to the following sources of information: brochures/leaflets ($p = 0.000$), visits to schools by university representatives ($p = 0.001$), friends ($p = 0.009$), teachers advices ($p = 0.020$), social networks ($p = 0.003$).

There is no significant difference between the number of information sources used by students in urban than in rural areas (urban – $M = 6.06$, $SD = 2.62$; rural – $M = 6.23$, $SD = 2.50$, $p = 0.607$). Preferences for information sources are similar except the information source friends, which are considered more important by the students from rural area ($p = 0.039$).

It was identified only one significant difference ($p = 0.000$) between the high school graduation grade average at students who do not use the web-site ($M = 7.49$, $SD = 0.98$) and graduation grade average of those who consider it useful or less useful ($M = 8.37$ / $M = 8.28$, $SD = 0.90$ / $SD = 2.62$). As it can be seen in the table below, students who were motivated by factors such as social factors used as information sources the web-site, open doors days, teachers advices, social networks; students who were motivated by career factors used as information sources personal visits to university and students who were motivated by self development factors used as information sources the high school teachers advices.

Table 3. Correlation between information sources and decision factors

Specification		Factor 1 social	Factor 2 career	Factor 3 development
web-site	r	.108*	.044	.061
	Sig. (2-tailed)	.046	.413	.258
visit to campuses	r	.022	.113*	.094
	Sig. (2-tailed)	.680	.037	.085
open doors days	r	.143**	.036	.015
	Sig. (2-tailed)	.009	.513	.778
teachers advices	r	.125*	.093	.144**
	Sig. (2-tailed)	.021	.086	.008
social networks	r	.135*	.082	-.047
	Sig. (2-tailed)	.013	.135	.385

Conclusions

This research gives a look into first year students' opinion towards the various media types (traditional/new). Regarding the general behavior of first year students on information sources, the study highlights that the majority uses web-sites. The new media is considered more useful by the students motivated by factors such as social factors. The results can be used in the marketing strategies.

The study was limited to the number of first year students that enrolled in the Romanian central region University. As future work I intend to repeat the study and/or make it longitudinal in order to identify whether the roles of various media types are changing.

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Electronic media management – use of cloud computing in students of higher school

Luis Ochoa Siguencia, Gilberto Marzano & Damian Herman

Introduction

Cloud computing is becoming an adoptable technology not only for business management and formal education, but also for keeping records and files for using it in daily activities. At the moment the virtualised resources as a service through the Internet has become not a privilege of big companies but also part of the students' daily use in their formal, non-formal informal education. The objective of this research was to find out the impact and use of cloud computing in our students of Management and Physical Education in the Academy of Physical Education in Poland, to be able to prepare a better methodology when using this important tool. In the paper we present the results of our quantitative research that shows that cloud computing is an excellent alternative for educational institutions which are especially interested in online collaborative learning or collaborative blended learning.

1. Theoretical background

Cloud computing is a metaphor for representing remote computing shared resources. It involves networks of remote servers and software that allow the delivery of hosted services over the Internet. The National Institute of Standards and Technology (NIST) defines cloud computing as follows:

Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction [Mell, Grance, 2011, p. 3].

However, computing as a utility is an old idea, which has recently emerged as a commercial reality [Armbrust, 2010; Ma, 2012]. The famous book “The Challenge of the Computer Utility” (1966), by Douglas Parkhill, first illustrated the idea of a Private Computer Utility, inspired to the electricity industry model and

based on an extensive use of hybrid supply models to counterbalance and mitigate risk. The same Parkhill's analogy with electricity and telephony is used to present cloud computing as a novel utility which requires ubiquitously interconnected infrastructure [Toosi, Calheiros & Buyya, 2014].

Cloud computing adopts a three model service concept:

- Software as a Service (SaaS). The user uses the provider's applications running on a cloud infrastructure which includes programming languages, libraries, services, tool network, servers, operating systems, storage, etc.
- Platform as a Service (PaaS). The user uses the provider's cloud infrastructure without managing or controlling it.
- Infrastructure as a Service (IaaS). The user does not manage and control the cloud infrastructure, but has control over operating systems, storage, deployed applications, and limited control of select networking components (e.g. host firewalls).

Cloud computing can be viewed as an extension of the object-oriented programming concept of abstraction which is applied to a physical computing environment. The true processes are hidden to a user (e.g. he does not need to know the details of network connections and the data storage organisation on multiple servers) and the cloud used to represent cloud computing well depicts the user's inexact knowledge of inner working components which deploy services.

Both grid computing and cloud computing economize computing costs by maximising shared resources. However, they refer to two different concepts, not mutually exclusive, of distributed computing architecture. In a computational grid, one large job is divided into many small portions and executed on multiple machines, while the computing cloud essentially allows the user to avail of various services without investing in the underlying architecture.

Cloud computing market is growing. Global SaaS software revenues are forecasted to reach \$ 106B in 2016, increasing 21% over projected 2015 spending levels as stated in Table 1 [Cisco Global Cloud Index, 2014]. Applications such as video and audio streaming are strong contributors to consumer cloud traffic growth, while newer services such as personal content lockers are also gaining in popularity.

Figure 1. Global Data Center IP Traffic Grow



Source: [Cisco Global Cloud Index, 2014].

At the moment, Amazon is considered to be the first company which provides cloud computing services on a large scale. Google Compute Engine (GCE) is the biggest threat to Amazon, while, recently, IBM presented its cloud computing solution (Blue Cloud), which is the combination of grid computing and virtualisation.

One of the most famous and appreciated free cloud application is Dropbox. It is a file hosting service operated by Dropbox Inc., that offers cloud storage, file synchronisation, personal cloud, and client software. Dropbox allows users to create and share a special folder on their computers [Drago et al., 2012]. Similar services are offered by Microsoft and Google. OneDrive is the free online storage of Microsoft and Google Drive is the file storage and synchronisation service created by Google. Other popular free cloud computing applications are Cyberduck, an open source client for file transfer and BoxCryptor, an easy-to-use cryptographic virtual hard disk, optimised for Dropbox, Google Drive, Skydrive Sugarsync and various other cloud providers.

However, the most widespread use of cloud computing, which people do not perceive as "cloud computing" at first glance, is that of social networking sites. YouTube, Facebook, LinkedIn, MySpace, Twitter, and many others offer cloud computing services. In fact, the main idea of social networking is allowing a user to share information with other people. A social networking site is essentially an online place where a user builds a personal network that connects him or her to other users.

Internet-based social networking sites have created a revolution in social connectivity and this revolution is involving higher education too.

2. Cloud computing in higher education

Universities can take advantage of available cloud-based applications offered by service providers and enable their own users/students to perform business and academic tasks.

Current economic crisis prompts managers in higher education institutions to improve services to students reducing their costs. In this circumstance, virtualisation is envisaged to be a viable solution for reducing the expense of providing computing services to all students on a campus.

Current literature, community discussions, and interviews with higher education Information Technology community leaders suggest that cloud computing is an important and likely transformational new capability [Katz, Goldstein, Yanosky & Rushlo, 2010]. There are higher education institutions which already virtualised aspects of their IT infrastructures and services, while many other are experimenting public cloud, especially for students' e-mail. However, there is a general awareness of the risks related to trust, confidence, and security. The opinion that higher education IT operators are not highly skilled in managing risk and service performance in third parties is largely shared among university managers.

The main benefits of using cloud computing in higher education concern virtualisation, software free or pay per use, and access to applications from anywhere. Virtualisation enables savings on hardware, electricity and maintenance costs due to centralisation of services. Licensed expensive software may be stored centrally and accessed as required. Students may be enabled to access it from any laboratories on campus, facilitating ubiquitous access to expensive applications [Jou, Wang, 2013].

The risks are essentially related to security, protection of sensitive data and copyright, while the limitations are associated to lack of confidence, number of applications running in a cloud and speed/lack of Internet connection.

To ensure data protection (e.g. students' scholastic records, staff accounts, etc.) many solutions have been proposed [McIrvine, 2010]. For example, data encryption and digital signature have been suggested for protecting authenticity and confidentiality of data [Waleed, Li & Hasan, 2014].

Despite the risks and limitations, cloud computing is considered a natural technical progression to an Internet-based IT architecture that provides economies of scale. This research aims at investigating on the impact of cloud computing in higher education, focusing on students' needs, habits and attitudes. Knowing students' behaviour and their expectation is essential in design cloud computing operative solutions and improve the reliability and effectiveness of the computing environment.

3. Research methodology

We start with a desk research on cloud computing infrastructure, after we present the results of a quantitative research in students of management and finally give some proposals and conclusions on the impact and use of this important tool in universities and schools, where the use of smart devices and mobile computers with internet connections are more intensive used by students and teachers.

For examining which cloud computing is better adapted for students' needs, we have prepared an online questionnaire form with closed, multiple and single choice questions. The students that are not using the clouds, were able to emphasise such a reply. Analysing the answers received from this questionnaire, will be possible to state the popularity and impact on the use of this type of Internet services in our students. For the statistical analysis, we decided to perform a descriptive statistics and nonparametric tests [Gibbons, Chakraborti 2011] using the StatSoft Inc. package of Statistical10.

Chi-squared test:

$$\chi^2 = \sum_{i=1}^n \frac{(O_i - E_i)^2}{E_i}$$

where:

O_i = the number of observations of type i ,

E_i = the expected number of observations of type i

and the Spearman's rank correlation coefficient

$$\rho = 1 - \frac{6 \sum d_i^2}{n(n^2 - 1)}$$

where

n – sample of size,

$d_i = x_i - y_i$ – the difference between ranks.

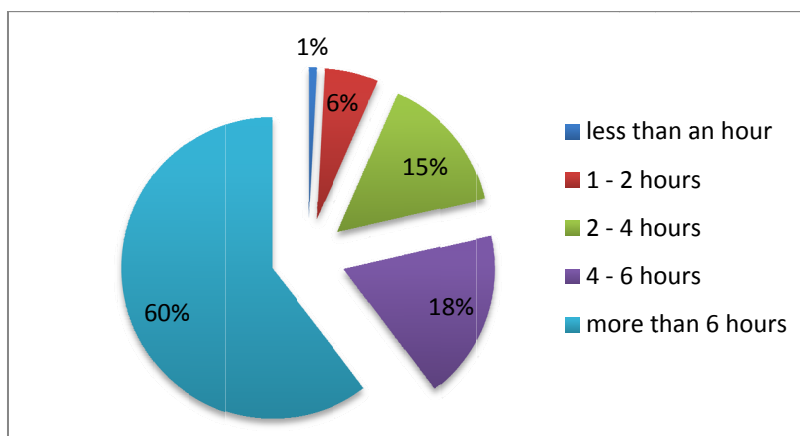
The purpose of this survey was to find out the impact and use of cloud computing in our students of Management in the Academy of Physical Education in Poland, to be able to prepare a better methodology when using this important tool in their study activities, to know the reasons why they choose one or other cloud computing for keeping and sharing their files. Whether the choice of the cloud is a decisions based on comparisons and analysis, or perhaps they choices for pressure of other users or advertisement. Other important aspect we will be studying is if the product satisfy their preference. Whether it is for them a valuable tool and if this is the case, for how long they are using it.

These questions are supposed to help us to determine whether the service is important for our students, what is the influence in their study performance and to determine the purposes for using this or that product. In our research we are focusing in the possible use of clouds for the help in the students research.

4. Research issues

The proof was carefully selected within students from the Academy of Physical Education in Katowice in April 2015. Students were asked to answer an online questionnaire during the information technology lessons with not interference of the researcher. 280 students of the Faculty of Management (45%) and the other 55% were students of Physical Education, keeping in mind a 50% of women and men respondents.

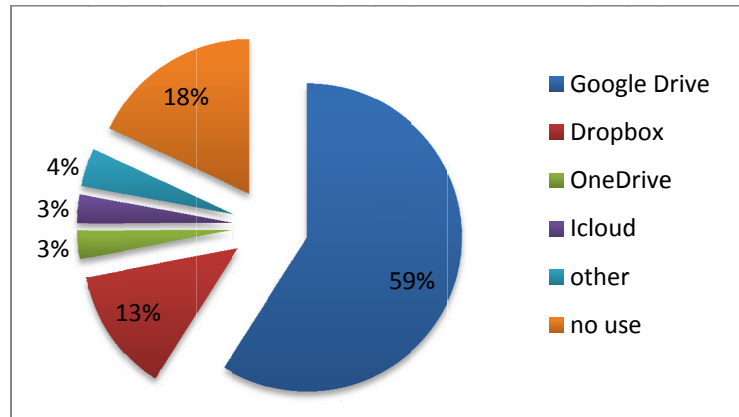
Figure 2. Number of hours/week spent on the web outside the university



All students taking part in the research are experienced Internet users with more than 3 years' experience and uses this tool in research activities. The only difference we found is in the number of hours spend in Internet outside of the University campus. Only 1% of respondents answered, less than an hour per week. However, the 60% spends over 6 hours. This show us the importance and intensity of use of this medium of contemporary young people. It is important to underline that the university library is equipped with computer terminals with Internet access. Hours spend in this or other places in the campus are not taking into account.

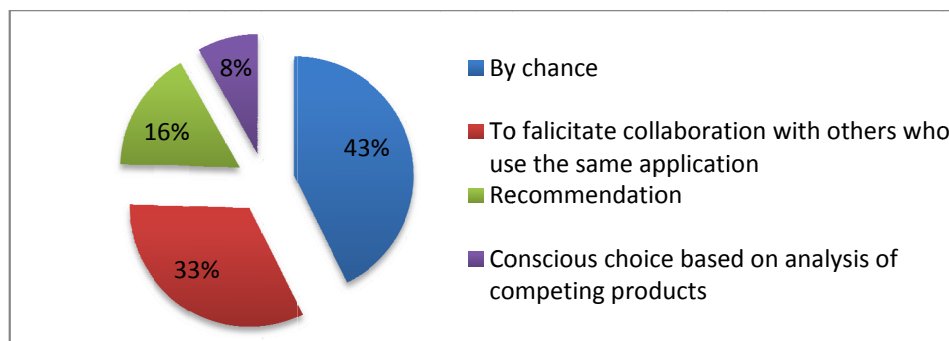
The objective of our research was to know which cloud computing students are using and why is the reason of their choice. The majority choose Disk Google as the main cloud used for research and keeping their files.

Figure 3. Cloud computing choice



When asked to choose one of the possibilities, two type of answers where the more predominates: by chance and to facilitate cooperation with other that use the same applications. By chance because the advertisements big search engines do of their product has effect in the customer decision and facilitate cooperation is important because to work in the same files from diverse devices it is necessary and easier if they have the same tools. This is the main reason why a type of cloud is more popular that others writhing students. Other aspect to take into account why they use this cloud and no other is the recommendation from other classmates (16%).

Figure 4. Reason of the choice



The largest per cent of respondents (43%) determined that it was not a conscientious choice to decide which cloud computing they will use for their research activities. $\frac{1}{3}$ of respondents agree that the use of a determined cloud was the consensus of the group and that it was chosen to facilitate the collaborative learning activities. 16% of researched students chose a specific applications because someone has suggested/recommended it. A small number of respondents (8%) said that the choice was examined consciously and that the choice was done after a strands – weakness analysis. We can, however, come to more interesting conclusions analysing deeply the above causes.

There is not a big differences between motivation amongst women and men, but there is much differences between students of various specialisations. Students of Management much more often choose the specific application in order to be able to work in a group, however, students of Physical Education chose the applications by chance. Values of the chi2 test are confirming it = 0.94 at $p = 0.33$ for the sex and $\chi^2 = 5.73$ at $p = 0.017$ for subject.

Figure 5. Differences in motivation in men and women

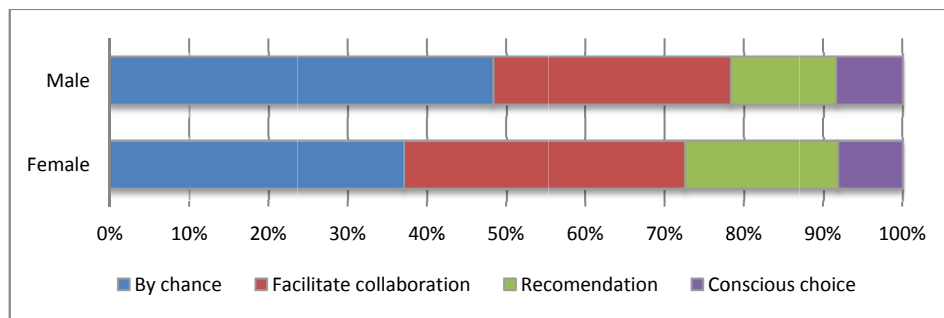
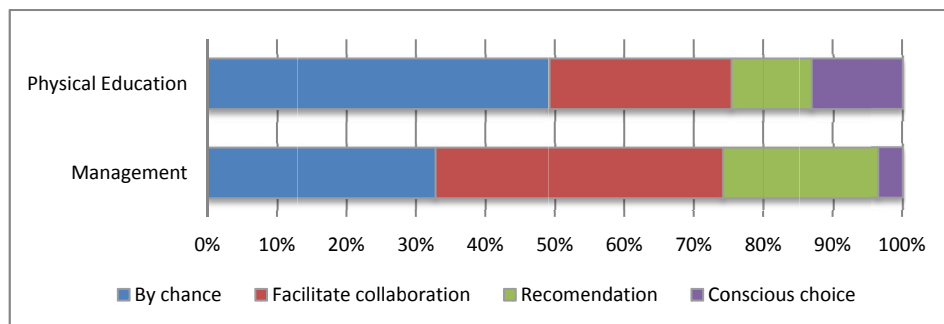
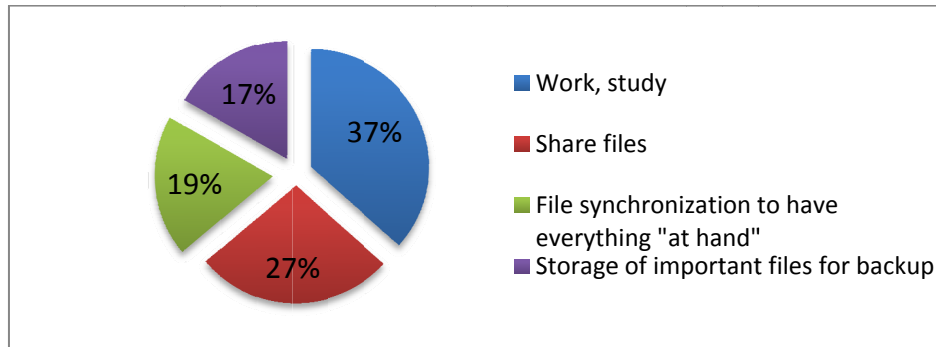


Figure 6. Differences in motivation among students of different faculties



Objective of the next question is mainly to know the reasons of using of such clouds. The multiple choice possibility of answer was offered. A chart based on the total amount of reply can be find in Figure 6.

Figure 7. Purpose of cloud computing use



Most people admitted to be happy with the cloud computing use and that is has a big impact in their work and research (37%); to share files admitted 27% of respondents and a 19% of respondents also synchronises files, which can be helpful in daily work and much more if they have to be moving from place to place. For the safety of the stored files is a slightly smaller number of people – 18%.

7% of students think all answers are appropriate and 66% of the respondents mentioned only one reason. It is also some differences between the sexes. Women are more interested in the use of the application to work and learn. 60% of women and 52% of men cited by the plaintiff. Whereas for men compared to women in the cloud is more important from the standpoint of the backup. 33% of men and 18% of women in the cloud is made relevant the security of the files. 11% of men and only 3% of women use all of the reasons for using the application. Some differences exist between students from different majors. Students of Management (65%) use the cloud to work and study, compared to 45% of the students Physical Education.

The overwhelming majority of users (97%) are satisfied with the services offered by the cloud of their choice. After analyses of the answers we can see how well-matched products are cloud computing.

Figure 8. Service satisfaction

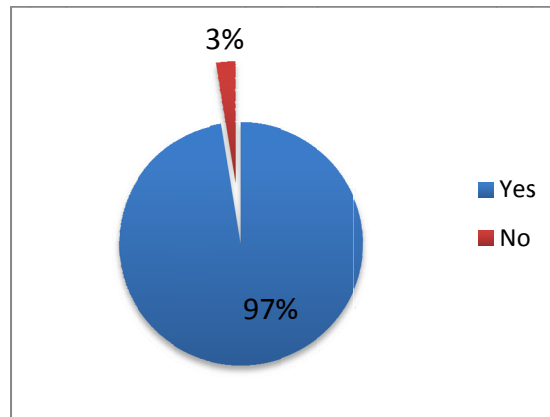
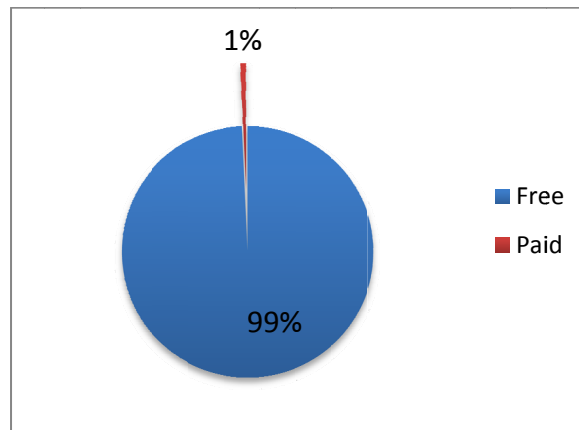


Figure 9. Account type

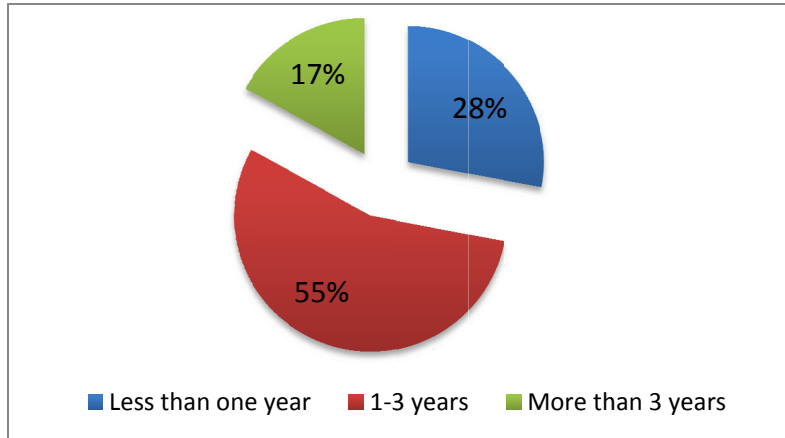


Then students answer to the question about the type of account they have. Paid account declared 2 people, which results in less than one percent of the study population. The rest of the respondents use the free account. If we combine these answers with the satisfaction degree of their use, can be assumed that the options that are offered in the package free of charge of the application providers are adequate and meet the needs of students. Free accounts offer a decent space for storing files, and only the most demanding users need more of it.

Work experience in the use of services is drawn as follows: More than 3 years using it 17% of students. 28% of users affirm that they do have some experience in the could computing use, but this experience is short because they use such services less than a year. In general we can state that more than half of respondents (55%), has contact with cloud computing use between 1-3 years. The data show a rapidly developing phenomena in the researched tools. Over a quarter of

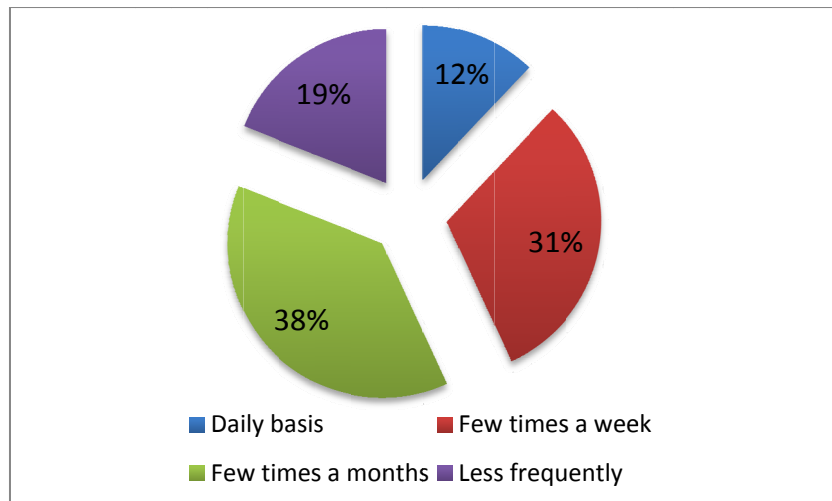
users started using these services only last year. In contrast, three years ago, only 13% of all respondents had an account in one of the clouds available in the market. It should also be noted that no statistically significant difference in length between men and women can be found. The stereotype that computers and the Internet is the domain of men long since lost its importance.

Figure 10. Cloud computing use experience



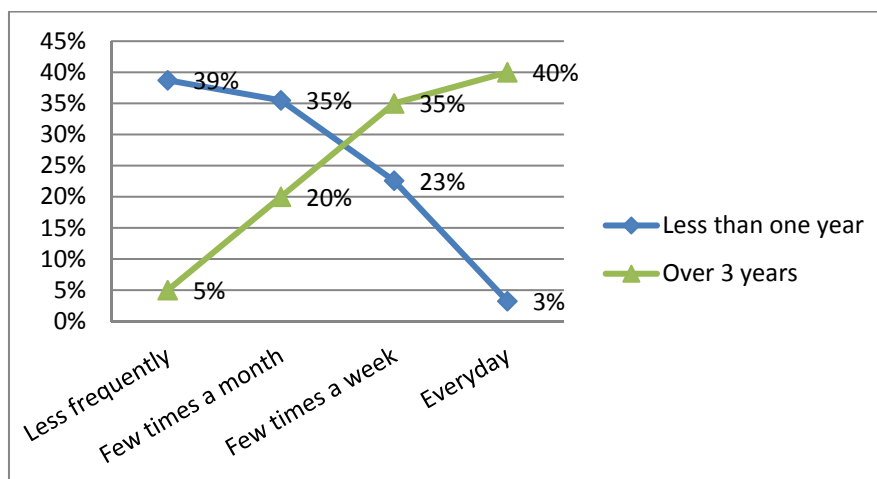
The last question has the objective to determine the intensity of use of these tools. 43% of researched population are using the clouds at least several times a week. Few times a month we had 38%, while the rest, 19% of users are less committed to the use of the possibilities offered by the cloud.

Figure 11. Frequency of use



At the same time as demonstrated by statistical analysis, those who already have more experience in working with a cloud – are more likely to use it. Cor. Rang Spearman $r_s = 0.40$ at $p = 0.00001$.

Figure 12. Experience and intensity of cloud use



Conclusions

This research aimed at investigating on the impact of cloud computing in higher education, focusing on students' needs, habits and attitudes. Knowing students' behaviour and their expectation is essential in design cloud computing operative solutions and improve the reliability and effectiveness of the computing environment. Our findings can be summarised as following:

- Cloud computing is an excellent tool for educational institutions which are especially interested in collaborative learning during the lessons or for group work research out of the classes.
- Online Collaborative Bended Learning is something we should start to use frequently in our lessons and the best platform to do within our students of Management in the Academy of Physical Education is Google Drive.
- Survey shows that cloud computing has a huge impact in our students daily activities and cannot be forgotten by lectures and professors while choosing the methodology to be used during the course.
- Use of clouds would increase the ability of research activities in students of the same course.

Some other facts we found in our research are:

- The majority of respondents are using cloud computing. Sometimes the use of more than one cloud is necessary because the possibilities they offer. The majority use Disk Google and Dropbox (72%).
- All students taking part in the research are experienced Internet users with more than 3 years' experience and uses as an important tool in their research activities. As 60% of our students spends over 6 hours per week for research, without counting the hours spent in the library and campus where Internet is available.
- The majority choose Disk Google as the main cloud used for research and keeping their files. 76% choose this cloud because facilitate cooperation with other classmates.
- More than half of the respondents (56%) uses the cloud for their work and because it is important to have the files when you are moving from place to place: university campus – university dormitories – back to home town during weekends.
- Nearly all students (99%) uses free clouds because in their opinion, free accounts offer a decent space for storing files.

The results of our research has presented important facts to be taking into account while choosing our methodology to be used during the lessons and research works. The frequent use of Internet and cloud computing by students make as to reflect on the enormous possibilities these tools offers to teachers to use them as a medium to promote the spirit of research and self-education. As said before, cloud computing should be used not only for distance learning and exchange of documents but also in the class for online collaborative learning activities.

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Part IV
**New tools and technologies in higher
education market**

Assessment of the use and usefulness of e-learning platform in higher education on the example of the Moodle platform used in the University of Economics in Katowice

Aleksandra Burgiel & Izabela Sowa

Introduction

The use of e-learning platforms in institutions of higher education is becoming increasingly common. Such platforms offer ample opportunities of transmitting teaching materials and monitoring students' progress, often larger and more useful than traditional tools and even other electronic channels of communication (e.g. e-mail).

The question is how students perceive and evaluate such platforms, both in general and with reference to their specific functionalities. Are they familiar with the possibilities the platforms offer? What is students' attitude towards e-learning platforms and what can be done to make them more popular on the one hand and more user-friendly on the other? To answer these questions we decided to use an example of the Moodle platform which is used for a couple of years in the University of Economics in Katowice (UEK).

The purpose of the paper is thus threefold:

- 1) firstly, to determine the degree and extent of Moodle use by teachers and students of the UEK,
- 2) secondly, to assess the usefulness and functionality of Moodle based on the students' opinions,
- 3) and thirdly, to identify some factors influencing students' assessment of Moodle.

The existing scientific literature does not address the above problems to a satisfying extent and the research on this topic is scarce due to the fact that e-learning platforms still represent relatively new teaching tool and therefore they are not used in educational processes as frequently as they should given their usefulness.

The paper is based on both secondary and primary sources. The secondary data included articles and reports referring to e-learning. The primary research involved an online survey conducted among the UEK students in April 2015.

Based on the collected data we were able to assess the usage and functionality of the platform as well as to indicate some practical implications of the findings.

1. Literature review

E-learning, also called distance learning, remote education, electronic teaching, online learning or a hybrid teaching [Clarke, 2004], is defined as the instructions provided to digital devices such as personal computers or mobile devices, in order to support education [Clark and Mayer, 2011, as cited in Redlarski and Garlik, 2014, p. 78]. The term e-learning is also understood as the use of different IT tools to assist the learning processes. These tools rely on the network, are distributed over the network and/or are adapted to the network [Clarke, 2004]. According to Rosenberg [2001, as cited in Ninoriya et al., 2011, p. 44], the first and the most important feature of e-learning is that it takes place in a networked environment. This means that computer of the learner is in constant communication with a central server. Also e-learning materials are accessible via an Internet browser on a personal computer.

There are three types of systems having different functionality, creating platforms for e-learning. These are:

1. Learning Management System, commonly known as LMS platform or e-learning platform, is a specialised software that enables the delivery of electronic training and managing the training process, i.e. planning and organisation of education;
2. Learning Content Management System is a specialised software that is used to design, create, modify, store, and reuse learning content and to deliver personalised training materials in the form of learning objects;
3. Virtual Classroom System is a solution for managing and conducting distance learning in synchronous mode. It provides a number of opportunities for collaboration, communication and distribution of knowledge with immediate feedback [Waćkowski, Chmielewski, 2007].

The concept of e-learning is not clear: besides the actual e-learning, where teaching process is implemented fully remotely, it also includes so called blended learning, i.e. a situation when the teaching process is only partly carried out remotely or when traditional stationary didactic process is supported by the methods and techniques of distance learning.

The Polish universities most frequently use blended learning model [Zieliński, 2012]. In this model, students both take part in traditional activities carried out at the university and have access to the content provided mostly through the Internet [Redlarski, Garnik, 2014]. Technological solutions allow to realise the variety of educational needs, including in particular:

- contact and communication with other network users,
- opportunity to work at a distance, using all kinds of applications – in both asynchronous and synchronous operations,
- ability to publish and promote created contents,
- ability to build collective knowledge,
- possibility of monitoring of what is happening in the network (including RSS) [Zrobek, Ratalewska, 2013, pp. 578-579].

The basic, most comprehensive environment in e-learning represents an educational platform, which enables the design, development and maintenance of online courses with a Web browser. The modern market offers a variety of solutions in e-learning platforms segment of both commercial and open source type.

E-learning platform is a flexible environment equipped with many tools and functionalities that not only allow, but significantly enhance and enrich the online learning process. They are designed in such a way as to ensure the opportunity to learn in an attractive form and enable effective transfer of knowledge, monitoring and evaluating students' progress. E-learning platforms offer wide possibilities of presenting educational content in different forms: materials in Microsoft Office documents, including PowerPoint and Adobe can be published; lessons during which parts of the content can be presented and then followed by quizzes and/or test questions; also tools allowing for students' collaboration can be used, and links to important web content can be provided [Pabian, 2013, p. 390].

Another aspect of e-learning platforms is that they allow for communication between the participants of the course. It seems however that at the universities in which a teaching process is not implemented remotely, but only supplemented by methods of distance learning, this functionality of e-learning platform is most frequently limited to a one-way communication: from a lecturer to a student. Research conducted by the Higher School of Banking shows that only 13% of students communicate with teachers and other students at the forum, and 7% via instant messaging [Nogiec, 2010].

One of the most popular e-learning platforms is Moodle (Modular Object-Oriented Dynamic Learning Environment). Moodle is an LMS class system designed to facilitate a collaborative, discovery-based approach to learning online. It is also recommended for supporting socio-constructivist pedagogy [Cahir et al., 2014]. According to the statistics from its web site, in June 2015 the software had 52,801 registered servers that were located in 219 countries, on which 7,638,532 courses were taught, with 167,291,732 students and 70,582,528 teachers using it [www1].

Also in Poland Moodle is the dominant educational platform [Pietrzykowski, 2012]. Its popularity results primarily from the fact that it is provided freely as an open source software, under the GNU General Public License which allows to avoid license fees [Zieliński, 2007].

The University of Economics in Katowice have been using Moodle platform from 2009. In May 2015 there were over 860 courses created at the platform. The UEK does not, however, conduct distance learning in its pure form, and the use of Moodle is not only complementary to the traditional teaching but also optional for the teachers.

2. Research methodology

To the best of our knowledge at the time of designing this research (February 2015), the empirical (especially scholarly) studies referring to the usage and assessment of Moodle platform among Polish students were rather scarce [Adamczewski, 2008, Nogieć, 2010], leaving us no other option than to design our own measures. So we decided to explore the students' opinions about usability and functionality of the platform by using numerous, but relatively simple measures.

An instrument used in a survey was prepared on the basis of the relevant literature review and the results of the preliminary study. The latter was a qualitative study in which we used self-administered questionnaire including some open questions and projective techniques (sentence completion and construction technique). All of them were meant to bring some ideas about what to include in the final questionnaire. Altogether 56 questionnaires were collected. The data indicated that students perceive Moodle as a suitable instrument enabling them to access the course materials. The main problems connected with Moodle mentioned by students regarded difficulties with logging in and using Moodle. Some students were comparing Moodle with e-mail, stressing superiority of the latter as a way to obtain course materials. This is the reason why we decided to ask questions about easiness of logging in, Moodle usability and its superiority over the e-mail.

The final questionnaire consisted of 13 questions. The majority of variables was measured directly by using single- and multiple-item scales. We used mostly 7-point itemised rating scales, balanced, and non-forced. In the majority of scales only endpoints and middle points of the scales were labelled.

In accordance with the goals of the study at the beginning we explored Moodle popularity and the usage of its 10 basic functionalities among the UEK teachers by asking students to indicate how many of the lecturers use these functionalities in their work. The possible responses were as follows: all teachers, majority of

teachers, few, one teacher, no one, I can't say. The next part of the questionnaire consisted of questions referring to students' liking of Moodle functions, and their assessment of Moodle usability as well as to the general assessment of Moodle. Summary description of these variables is presented in Table 1. In case of the multiple item scales a validity test was done using exploratory factor analysis and a reliability test was done using Cronbach's alpha (see Table 1).

Table 1. Summary of final measures used in the study

Measure	Scale range	Scale type	Measure	No. of items	Scale range	Scale type	Reliability (Cronbach's alpha)	No. of factors
Usability of Moodle during the studies	1 (very bad) to 7 (very good)	Itemised rating scale	Students' liking of Moodle functionalities	6	1 (I dislike it very much) to 7 (I like it very much)	Itemised rating scale	.847	1
Easiness of finding necessary information on Moodle								
Easiness of logging in Moodle			Moodle superiority over e-mail with regard to obtaining course materials	3	1 (definitely not) to 7 (definitely yes)	Likert type	.954	1
Students' general assessment of Moodle								

The last part of the questionnaire referred to a respondent's profile. We asked about the level and the major of the studies. One of the questions characterising respondents regarded the number of Moodle courses taken by students prior to the research. In fact this number was meant to serve as a proxy for students' experience in using Moodle and then to be used as an independent variable in further analyses.

In this paper we want to contribute to the existing literature by describing the usage and popularity of Moodle among the UEK teachers and students and especially by investigating students' opinions about this platform. As this is our primary goal we treat the study as having exploratory character. Hence, part of the analyses we use in the study is relatively simple, oriented more towards description than explanation. However, to reach the goal of identifying determinants of students' assessment of Moodle and offer some insights about different factors influencing students' opinions about the platform we used univariate analysis of variance and the multiple regression.

3. Data collection and sample

To obtain necessary information we decided to use an online survey. The survey was carried out in April and May 2015. A link to the questionnaire was sent to students of the UEK, and several teachers turned to their students during classes with a request to complete the survey and to spread information about the research. Altogether 223 students completed the questionnaire, of which 216 people (96.9%) declared the use of Moodle. After verification of the completeness of the data we left the replies received from 208 students for the final analysis. Among the respondents 89.9% were students of bachelor studies, and 9.6% of master studies, while one person was a student of the doctoral studies. Respondents represented 9 different majors of studies conducted on 4 faculties of the UEK (see Table 2).

Table 2. Sample characteristics (N = 208)

Majors	Percent	Semester of studies	Percent
Quantitative Methods for Economics and Business	31.7	2 nd semester of bachelor studies	8.2
Informatics	28.4	4 th semester of bachelor studies	44.0
Informatics & Econometrics	10.1	6 th semester of bachelor studies	37.7
Travel and Tourism Economy	7.7	2 nd semester of master studies	4.3
Management	7.2	4 th semester of master studies	5.3
Logistics	5.3	Other	0.5
Economics	4.8		
International Business	3.8		
International Economic Relations	1.0		

As we mentioned one of the important questions characterising respondents regarded the number of Moodle courses taken by students prior to the research (see Table 3). Respondents reported that during their studies they participated in a minimum of 1 and a maximum of 20 courses conducted on the platform and on an average they participated in 6.5 courses. These responses were analysed in relation to the students' major of studies (see Table 4). The highest number of courses had students of Informatics & Econometrics ($M = 8.7$), slightly less students of Informatics ($M = 7.9$) and Quantitative Methods for Economics and Business ($M = 7.7$). The smallest number of courses was offered to students of International Business ($M = 1.1$), and students of Economics, Travel and Tourism Economy, Management and International Economic Relations had an average of 2-3 courses during their previous studies.

Table 3. Number of Moodle courses taken by respondents – statistics

Statistics	No.	Mean	Std. Deviation	Minimum	Maximum	Percentiles	
						33.333333	66.666667
	208	6.5	3.94895	1	20	4.6667	8

Table 4. Number of courses for which Moodle was used vs. major of the studies

Majors	No.	Minimum	Maximum	Mean	SD
Informatics & Econometrics	21	3	20	8.67	4.25
Informatics	59	2	20	7.88	3.73
Quantitative Methods for Economics and Business	66	2	20	7.71	3.57
Logistics	11	3	10	5.91	1.92
Economics	10	1	6	3.30	1.42
Travel and Tourism Economy	16	1	6	3.06	1.29
Management	15	1	5	2.40	1.18
International Economic Relations	2	1	3	2.00	1.41
International Business	8	1	2	1.13	0.35

We used a One-way Analysis of Variance (ANOVA) to examine whether the number of Moodle courses taken is a function of the major of the studies. To do so we distinguished 3 groups of respondents on the basis of their major of studies. We aimed to obtain possibly equinumerous categories to meet one of the ANOVA assumptions hence we distinguished:

1. IT specialists – students of Informatics and Informatics & Econometrics.
2. Analysts – students of Quantitative Methods for Economics and Business.
3. Others – students of the other majors.

The first group included students of Informatics and Informatics & Econometrics because in case of these two majors number of courses was the highest. We also assumed that students of computer science should not have problems with the use of computer programs, e-platforms, etc., and even their teachers probably use Moodle more often than teachers at other majors. In turn, Quantitative Methods for Economics and Business is the major for which the use of Moodle is above average, but both interests and skills of the students are not as closely related to IT as in case of students of Informatics. Respondents from the third group, so representing all the other majors and specialties, not only had less frequent contact with Moodle (the average number of courses at other majors was less than 6), but also their basic field of education is not related to IT in any way. See Table 5 for the descriptive statistics for each of the three groups.

Table 5. Number of courses for which Moodle was used vs. groups distinguished on the basis of major of the studies

Specification	No.	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Analysts	66	7.7121	3.57239	.43973	6.8339	8.5903	2.00	20.00
IT Specialists	80	8.0875	3.86216	.43180	7.2280	8.9470	2.00	20.00
Others	62	3.1613	1.94341	.24681	2.6678	3.6548	1.00	10.00
Total	208	6.5000	3.94895	.27381	5.9602	7.0398	1.00	20.00

Since the Levene's F test revealed that the homogeneity of variance assumption was not met ($p = .001^1$), we used the Welch's F robust test of equality of means. The one-way ANOVA revealed a statistically significant main effect (Welch's $F(2,128.99) = 71.96, p < .001$) indicating that not all majors had the same average number of Moodle courses.

Post hoc comparisons using Games–Howell procedures were used to determine which pairs of the three group means differed (see Table 6). The results indicate that students who study Informatics ($M = 8.09$) and those who study Quantitative Methods for Economics and Business ($M = 7.71$) had significantly higher number of Moodle courses than did students who study all other majors ($M = 3.16$). However, there are no statistically significant differences between the number of courses taken by “Analysts” and “IT specialists”.

Table 6. Games–Howell post hoc results of number of Moodle courses taken by a respondent by major of the studies

(I) classes according to specialty	(J) classes according to specialty	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Analysts	IT Specialists	-.37538	.61629	.815	-1.8645	1.1137
	Others	4.55083*	.50426	.000	3.3266	5.7750
IT Specialists	Analysts	.37538	.61629	.815	-1.1137	1.8645
	Others	4.92621*	.49736	.000	3.7221	6.1303
Others	Analysts	-4.55083*	.50426	.000	-5.7750	-3.3266
	IT Specialists	-4.92621*	.49736	.000	-6.1303	-3.7221

* The mean difference is significant at the 0.05 level.

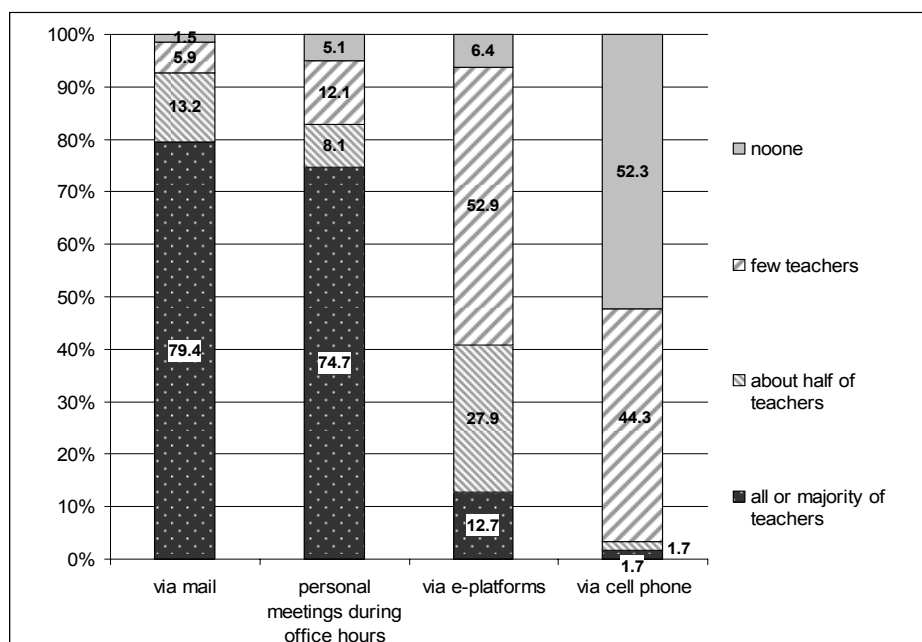
4. Assessment of the Moodle usage and functionality by the UEK students – general results

Assessment of Moodle usage among the UEK teachers

Respondents declared that they communicate with their professors primarily via e-mail (see Figure 1). More than half of them stated that this form of contact was used by the majority of teachers, and 26% of surveyed said that e-mail is used by all teachers. The second way of contact in terms of popularity is a personal meeting during office hours. Over 40% of respondents said they offered such opportunity by all lecturers, and almost 1/3 said that almost all of teachers contact students during office hours.

¹ An alpha level of .05 was used for all subsequent analyses.

Figure 1. Forms of contact with students used by the UEK teachers (N = 208)



The least frequent means of communication with students is mobile phone: more than half of the respondents admitted that none of the teachers used it to communicate with them. According to over 44% of students mobile phones are used by at most a few lecturers.

According to 6.4% of the respondents, none of the lecturers uses e-platforms to communicate with students, and 53% of students claims that only several teachers use the platform for this purpose, and 28% that about a half. Less than 1% of the respondents claimed that the platforms are used by all teachers.

Learning platforms are therefore not seen as a popular form of communication between teachers and students – from the students' perspective teachers are much more likely to use e-mail and only slightly less popular personal contact. These conclusions are confirmed by further data, describing the opinions of students about the functions of Moodle used by the UEK teachers and their popularity.

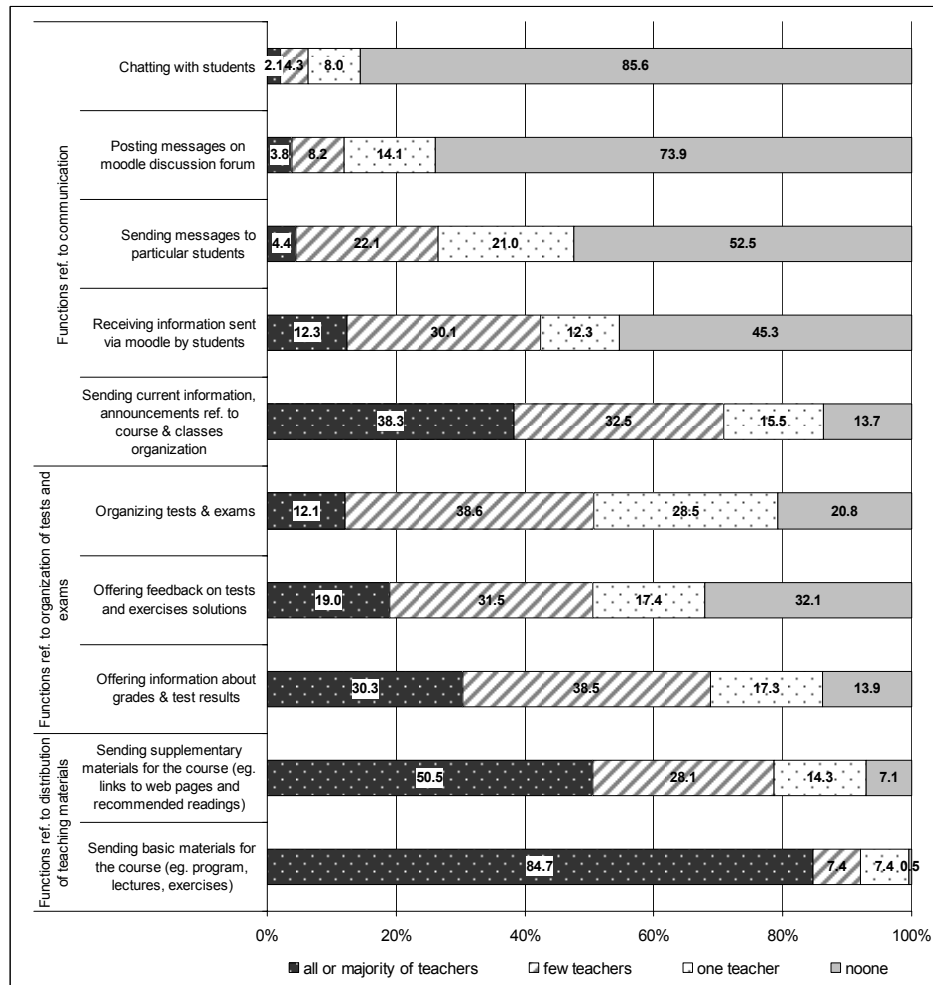
According to the declarations of the respondents, the most commonly used functions of Moodle are those related to the distribution of teaching materials. Sending basic materials for the course (e.g. program, lectures, exercises) is an essential way to use the platform: 99.5% of respondents declared that at least one of their teachers actually used this feature, and 85% of respondents said that the materials were supplied by all or majority of the lecturers. Half of the respondents note that all or most teachers also send additional materials.

Functions associated with the organisation of tests is used less frequently: every fifth respondent states that none of their teachers organised tests through the platform, and 28.5% declared that they were organised by only one lecturer. Only 12% of respondents said that the test are used by the majority of their teachers. Many teachers offer information about grades and test results through a platform – as much as 86% of respondents had at least one teacher using this option, and 30% said that all or majority of teachers did so. Fewer respondents (about $\frac{2}{3}$) had a chance to use the feedback offered by their teachers on tests and exercises solutions.

Functions related to communication with students were used the least frequently. Teachers indeed quite commonly posted current information through the platform (contact with at least some who are using this function was declared by 70.8% of respondents, while only 13.9% of students were not offered such a possibility), but transferring information to all or majority of the teachers through Moodle was declared by only 42.4% of respondents, and 12.3% of students said that such a possibility was given to them by only one teacher. Messages to individual students through the platform are sent even less frequently: 52.5% of respondents said that no teacher did use this possibility, and one in five said a few lecturers sent such messages. The vast majority of respondents claim that none of the teachers participates in either chatting with students via Moodle (85.6%) or in discussions at the Moodle forum (73.9%).

Low popularity of the use of the platform for communication with students is probably due to the fact that the most popular are the traditional forms of contact, i.e. personal meetings and e-mail, and the platform itself is seen by the teachers as merely an efficient way to share teaching materials with students. In addition, discussions in chat rooms and on forums are not yet academic tradition. Additionally participation in them requires the commitment of both or multiple sides in (almost) the same time which is more difficult in terms of organisation than e.g. sending an e-mail. It seems, however, that there are other reasons for low activity of teachers in this area. From the formal and organisational point of view, teacher's participation in forum or chat discussion is not regarded as equivalent to any mandatory duties, even office hours at the UEK. Thus, from the teachers' perspective this way of contact with students represents an additional burden rather than a friendly and modern form of remote work. It is a demotivating factor for greater involvement of employees in this kind of activity, even if teachers are aware of the opportunities offered in this respect by Moodle.

Figure 2. Usage of Moodle functions by the UEK teachers as estimated by students (N = 208)



Students' opinions about Moodle functionalities and their assessment

In general, respondents had mostly positive or neutral attitude towards the analysed functionalities of the platform, as average scores ranged from 4 (neutral rating) to 6.11 on a 7-point scale (see Table 7).

Table 7. Students' liking of selected functionalities of Moodle platform – statistics*

Variables:	No.**	Mean	Mode	SD
Obtaining materials for the course via Moodle	200	6.11	7.00	1.46104
Receiving current information and announcements ref. to course & classes organisation	189	5.20	6.00	1.71408
Possibility to send & receive messages to and from the teacher	154	4.81	4.00	1.58868
Writing exams and tests via Moodle	172	4.37	4.00	1.86680

Table 7 cont.

Possibility to post messages on Moodle discussion forum	122	4.16	4.00	1.52131
Possibility to chat with teachers	117	4.00	4.00	1.72207
Students' liking of Moodle functionalities (mean value of assessments of all functionalities)	202	5.03	7.00	1.35534

* Items were measured on a 7-point bipolar scale where 1-I dislike it very much, 7-I like it very much.

** Liking of particular functionalities was assessed only by those students who had actually used the function prior to the research; the others could choose response „Never used it”.

Among the Moodle functionalities respondents liked the most an opportunity to receive course materials ($M = 6.11$, $SD = 1.46$). More than half of them (56%) rated this possibility at 7, and another 25% at 6. Only 5% of respondents said they did not like this function of Moodle. Obtaining current information was assessed slightly worse ($M = 5.2$, $SD = 1.71$), but a quarter of the respondents assessed their liking of this functionality at 7, and another 30% at 6. Even lower was rated the ability to send messages from and to the teacher: mean value amounted to 4.81 ($SD = 1.58$), and the percentage of people who declared they liked it very much amounted to only 17.3%. Other features of Moodle: the ability to write exams, participate in forum and chat with the teacher arouse ambiguous feelings among students. In all cases, the largest group of respondents rated them at 4 (Neither I like nor dislike it), so the majority of respondents had difficulty expressing their attitude toward these functions. Mean values amounted to ca. 4 as well. At the same time the percentage of people who expressed negative and positive opinions was similar and amounted to approx. 20%. The exception is the students' liking of writing tests via Moodle – in this case the number of people expressing positive opinions were almost two times greater than the number of people negatively evaluating this option (32.6% vs. 18.6%, respectively). Opinions on this subject were also the most diversified in comparison with the evaluation of other functionalities ($SD = 1.87$).

Additional information obtained in this question allows us to state which functionalities of Moodle are the most and the least frequently used by students. The percent of responses “Never used it” reflects the actual popularity of the particular function. It occurs that ca. $\frac{2}{5}$ of respondents never used possibilities of posting messages on Moodle discussion forum or chatting with teachers through Moodle (38.9% and 41.3% respectively). As many as $\frac{1}{4}$ (23.6) of students never received or sent any message from/to a teacher with the use of Moodle platform and almost 15% never wrote any test or exam via platform. Obtaining materials for the lectures or current information and announcements via Moodle is much more common – only 1.4% of students never sought any teaching materials from the platform, and 6.7% did not receive any information on the course.

The next subject of an analysis were the students' opinions on receiving educational materials through the platform (see Table 8). Comparing the acquisition of materials via Moodle vs. via e-mail, respondents recognised the superiority of a platform in all analysed areas, although this is the most evident with regard to the ease and convenience of uploading materials ($M = 4.61$ and $M = 4.54$, respectively) because in both cases approx. 40% of respondents agree that receiving materials via Moodle is easier and more convenient. At the same time approx. $\frac{1}{5}$ of respondents do not agree with this opinion, nor with the fact that getting the materials in this way is faster.

Table 8. Obtaining course materials via Moodle vs. obtaining materials via e-mail – statistics*

Variables:	No.**	Mean	Mode	SD
Obtaining course materials via Moodle is easier than obtaining materials via e-mail	202	4.61	7.0	1.97258
Obtaining course materials via Moodle is more convenient than obtaining materials via e-mail	202	4.54	7.0	2.09749
Obtaining course materials via Moodle is faster than obtaining materials via e-mail	202	4.39	4.0	1.99238
Moodle superiority over e-mail with regard to obtaining course materials (mean value of all assessments)	202	4.51	7.0	1.93138

* Items were measured on a 7-point bipolar scale where 1-Definitely not, 7-Definitely yes.

** Assessments were made only by those students who had actually obtained materials via Moodle – the others could choose response “I don't know, I never collected any materials via Moodle”.

At the end students were asked to give their opinions on the key features of Moodle, i.e. the ease of finding the necessary materials and ease of logging, as well as on the usefulness of the platform. In addition, they were asked to make an overall assessment of the platform (see Table 9). Ease of finding the desired content and ease of logging were assessed positively by the majority of respondents, though ratings are not too high ($M = 5.01$, $SD = 1.47$ and $M = 4.74$, $SD = 1.69$, respectively). Despite this, the students fairly highly assessed Moodle usability during the studies ($M = 5.39$, $SD = 1.37$). As many as half of them rated platform utility the highest (at 6 or 7). Unfortunately, the lowest ratings were given to an overall assessment of the platform ($M = 4.4$, $SD = 1.22$).

Table 9. Assessment of Moodle utility and functionality – statistics

Variables	No.	Mean	Mode	SD
Easiness of finding necessary information	205	5.01	5.00	1.47022
Easiness of logging in Moodle	206	4.74	6.00	1.69557
Usability of Moodle during the studies	207	5.39	5.00	1.37117
Students' general assessment of Moodle	208	4.40	5.00	1.22352

5. Factors determining students' assessment of Moodle

During the research we wanted to establish which factors shape students' general assessment of Moodle. By this we aimed to explore what can/should be done to improve students' opinion about Moodle and as a result encourage them to use the platform.

Ordinary least squares multiple regression was used to determine to what degree students' experience in Moodle (expressed by the number of Moodle courses taken) and students' assessment of some chosen functionalities of Moodle (i.e. easiness of logging in, of finding necessary information, superiority of obtaining materials via Moodle vs. via e-mail, and liking of Moodle functionalities) influence on students' general assessment of Moodle.

Preliminary examination of the results indicated that there was no extreme multicollinearity in the data using Stevens' [2002] criterion (all variance inflation factors were less than 2.0). Exploratory data analyses were conducted to test the assumptions of regression and to determine if there were any outliers and/or potentially influential data points, for which none were found for this set of data. Correlations analyses indicated that there are statistically significant correlations between dependent variable (students' general assessment of Moodle) and all independent variables (see Table 10). However, the correlation coefficient for students' liking of Moodle functionalities was very low.

Table 10. Pearson's correlations for regression variables (N = 208)

Specification	Students' general assessment of Moodle	Number of courses for which Moodle was used	Easiness of finding necessary information	Easiness of logging in Moodle	Superiority of obtaining materials via Moodle vs. via e-mail	Students' liking of Moodle functionalities
Students' general assessment of Moodle	.	.357**	.612**	.499**	.550**	.165*
Number of courses for which Moodle was used		.	.305**	.301**	.306**	-.055
Easiness of finding necessary information			.	.470**	.500**	.175*
Easiness of logging in Moodle				.	.362**	.091
Superiority of obtaining materials via Moodle vs. via e-mail					.	.145*

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

To investigate the research question we found that the entire set of variables accounted for approximately 49.8% ($R^2 = .498$, $F(5,186) = 36.842$, $p < .001$) of the total variance in students' general assessment of Moodle. Based on the results from this sample of students, the set of five predictor variables appear to provide a significant degree of influence on students' general assessment of Moodle.

Out of the five independent variables used in this study, only four were significant contributors to the explanation of the students' overall Moodle assessment – these were significant at the .005 alpha level (see Table 11). In order of importance, the students' rates of easiness of finding necessary information on Moodle had the strongest influence ($\beta = .34$, $p < .001$). This was followed by the students' perception of Moodle superiority over e-mail with regard to obtaining course materials ($\beta = .25$, $p < .001$) and then by the students' assessment of easiness of logging in Moodle ($\beta = .19$, $p < .01$). The weakest but still significant was the influence of the students' experience in Moodle as estimated by the number of Moodle courses taken ($\beta = .13$, $p < .05$). All the coefficients are positive, indicating the direct relation between variables. This means that the greater the students' assessments of particular Moodle functionality and the greater students' experience in Moodle the greater their overall assessment of the platform.

Table 11. Results of regression of students' general assessment of Moodle on students' experience in Moodle and students' assessment of Moodle functionalities

Model ^a	Unstandardised coefficients		Standardised coefficients	t	Sig.	Collinearity statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	1.049	.323		3.249	.001		
Easiness of finding necessary information	.290	.055	.344	5.230	.000	.626	1.598
Moodle superiority over e-mail with regard to obtaining course materials	.162	.040	.254	4.098	.000	.706	1.417
Easiness of logging in Moodle	.135	.044	.187	3.054	.003	.719	1.391
Number of Moodle courses taken	.040	.018	.131	2.294	.023	.824	1.214
Students' liking of Moodle functionalities	.051	.048	.056	1.051	.295	.947	1.056

Note: $R = .705$, $R^2 = .498$; Adjusted $R^2 = .484$; $F(5, 186) = 36.842$; $p < .001$.

^a Dependent Variable: Students' general assessment of Moodle.

As an additional goal of the analyses we wanted to establish if and how students' experience in Moodle influences their opinions about the platform, its functionality and usability. We assumed that students who are more experienced rate functionality and usability of Moodle (i.e. easiness of finding necessary information, easiness of logging in as well as superiority of obtaining course materials via Moodle vs. via e-mail) higher than less experienced ones. To verify this assumption we used the analysis of variance.

Because the analysed independent variable (number of Moodle courses prior to the research) in its original form contained too many values, it was necessary to distinguish new groups of students, allowing for comparisons. We aimed to obtain possibly equinumerous categories to meet one of the ANOVA assumptions hence we adopted the boundaries defined by percentiles (see Table 3) and distinguished:

1. Beginners – students who took 1 to 4 courses.
2. Experienced – students who took 5 to 7 courses.
3. Advanced – students who took 8 or more courses.

To test for normality we conducted Shapiro–Wilk's test, but it did not confirm the normal distribution for the analysed variables. However, since the Shapiro–Wilk's test is rather conservative, we supplemented assessment of normality with an examination of skewness [Tabachnick, Fidell, 2007]. Since none of the standardised skewness values exceeded ± 3.29 we may state that the assumption of normality was met for this set of data.

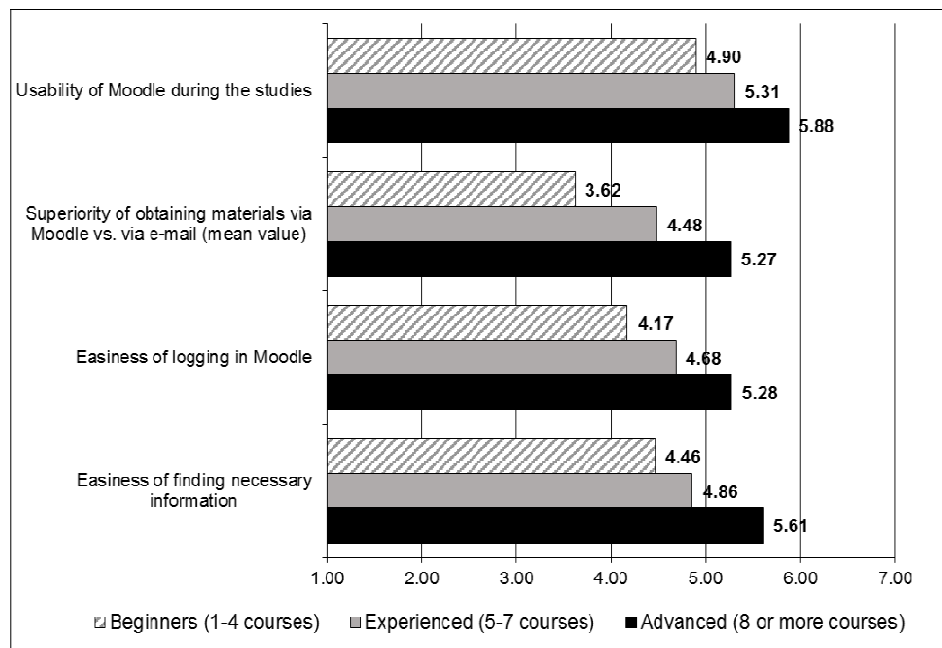
Levene's statistic confirmed homogeneity of variance in case of all variables. The one-way ANOVA revealed a statistically significant main effects for four out of five variables (see Table 12), i.e. easiness of finding necessary information, easiness of logging in Moodle, superiority of obtaining materials via Moodle vs. via e-mail and usability of Moodle during the studies, indicating that there are statistically significant differences between mean values of these variables in groups of students distinguished on the basis of their experience in Moodle. The more courses students had prior to the research so the more experienced they are the higher they rate Moodle, its functionality and usability. Only liking of Moodle functionalities was rated in the same way by the students having different levels of experience.

Table 12. Assessment of Moodle utility and functionality vs. number of Moodle courses taken – ANOVA results

Dependent variables		Sum of Squares	df	Mean Square	F	Sig.
Easiness of finding necessary information	Between Groups	50.084	2	25.042	12.942	.000
	Within Groups	390.872	202	1.935		
	Total	440.956	204			
Easiness of logging in Moodle	Between Groups	45.185	2	22.593	8.428	.000
	Within Groups	544.179	203	2.681		
	Total	589.364	205			
Superiority of obtaining materials via Moodle vs. via e-mail (mean value)	Between Groups	98.235	2	49.117	15.002	.000
	Within Groups	651.540	199	3.274		
	Total	749.775	201			
Usability of Moodle during the studies	Between Groups	35.851	2	17.925	10.405	.000
	Within Groups	351.454	204	1.723		
	Total	387.304	206			
Students' liking of Moodle functionalities (mean value)	Between Groups	.142	2	.071	.038	.962
	Within Groups	369.083	199	1.855		
	Total	369.226	201			

The analysis confirmed that the higher the number of courses taken by students, the higher they rate Moodle usability, its superiority over e-mail, easiness of logging and easiness of finding necessary information (see Figure 3).

Figure 3. Mean values of Moodle usability and functionality assessments in groups of students distinguished on the basis of Moodle experience



Post hoc comparisons using Scheffe procedures were used to determine which pairs of the three group means differed (see Table 13). The results indicate that students who took 1-4 courses and those who took 5-7 courses rated Moodle significantly lower than did students who took 8 or more courses. However, there are no statistically significant differences between the groups we called “Beginners” and “Experienced”.

Table 13. Scheffe post hoc results of selected Moodle assessments by number of Moodle courses taken by a respondent

Dependent Variable	(I) Classes according to number of courses	(J) Classes according to number of courses	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
1	2	3	4	5	6	7	8
Easiness of finding necessary information	Beginners (1-4 courses)	Experienced (5-7 courses)	-.39588	.24898	.285	-.1.0099	.2181
		Advanced (8 or more courses)	-.1.14383*	.22921	.000	-.1.7091	-.5786
	Experienced (5-7 courses)	Beginners (1-4 courses)	.39588	.24898	.285	-.2181	1.0099
		Advanced (8 or more courses)	-.74795*	.24175	.009	-.1.3441	-.1518
	Advanced (8 or more courses)	Beginners (1-4 courses)	1.14383*	.22921	.000	.5786	1.7091
		Experienced (5-7 courses)	.74795*	.24175	.009	.1518	1.3441
Easiness of logging in Moodle	Beginners (1-4 courses)	Experienced (5-7 courses)	-.51030	.29305	.222	-.1.2329	.2123
		Advanced (8 or more courses)	-.1.10109*	.26900	.000	-.1.7644	-.4378
	Experienced (5-7 courses)	Beginners (1-4 courses)	.51030	.29305	.222	-.2123	1.2329
		Advanced (8 or more courses)	-.59079	.28379	.117	-.1.2906	.1090
	Advanced (8 or more courses)	Beginners (1-4 courses)	1.10109*	.26900	.000	.4378	1.7644
		Experienced (5-7 courses)	.59079	.28379	.117	-.1.090	1.2906
Superiority of obtaining materials via Moodle vs. via e-mail (mean value)	Beginners (1-4 courses)	Experienced (5-7 courses)	-.86093*	.32874	.034	-.1.6717	-.0502
		Advanced (8 or more courses)	-.1.64754*	.30089	.000	-.2.3896	-.9055
	Experienced (5-7 courses)	Beginners (1-4 courses)	.86093*	.32874	.034	.0502	1.6717
		Advanced (8 or more courses)	-.78661*	.31526	.047	-.1.5641	-.0091
	Advanced (8 or more courses)	Beginners (1-4 courses)	1.64754*	.30089	.000	.9055	2.3896
		Experienced (5-7 courses)	.78661*	.31526	.047	.0091	1.5641

Table 13 cont.

1	2	3	4	5	6	7	8
Usability of Moodle during the studies	Beginners (1-4 courses)	Experienced (5-7 courses)	-.41179	.23382	.215	-.9884	.1648
		Advanced (8 or more courses)	-.97645*	.21565	.000	-1.5082	-.4447
	Experienced (5-7 courses)	Beginners (1-4 courses)	.41179	.23382	.215	-.1648	.9884
		Advanced (8 or more courses)	-.56466*	.22636	.047	-1.1228	-.0065
	Advanced (8 or more courses)	Beginners (1-4 courses)	.97645*	.21565	.000	.4447	1.5082
		Experienced (5-7 courses)	.56466*	.22636	.047	.0065	1.1228

* The mean difference is significant at the 0.05 level.

6. Moodle main advantages and disadvantages

In the section containing open questions respondents were asked about the main advantage and disadvantage of Moodle. Responses were systematised and classified into several groups, which allowed a simple quantitative analysis of the students' declarations (see Table 14). When asked about the Moodle advantage 61 respondents (27.3%) did not answer while the main disadvantage was not mentioned by 71 people (31.8%).

Table 14. Main advantages and disadvantages of Moodle perceived by students (N = 208)

Advantages	No.	Percent of respondents	Disadvantages	No.	Percent of respondents
Constant access to the course content	57	35.2	Interface	30	19.7
All information in one place	43	26.5	Problems with logging in	29	19.1
Order in information	15	9.3	Non-use by teachers	28	18.4
Easiness of usage	13	8.0	Performance/technological problems	24	15.8
Speed of operation	9	5.6	Tests	9	6.0
Functionality	8	4.9	Difficulty with finding information	4	2.6
Interactivity	7	4.3	Low functionality	6	3.9
The certainty of delivery and archiving of the content	7	4.3	Other	14	9.2
Other	12	7.4	No disadvantages	12	7.9

Many respondents appreciate the fact that Moodle allows for the constant access to the stored information (35.2%) and additionally they value that the information is offered in one place (26.5%). The fact that the materials are ordered is appreciated by 9.3% of respondents. Moodle functionality is though rarely appreciated: the fact that the platform usage is easy was mentioned by only 8% of respondents, and 5.6% are satisfied with the speed of its operation.

Among the platform disadvantages almost every fifth respondent mentioned outdated, unfriendly, unintuitive and difficult to read interface. One of the respondents stated: “[...] *graphic design looks like a webpage made by 15-year-old computer science student*”. A similar percentage of respondents pointed the problems with logging, and 15.4% referred to other technological problems, i.e. the fact that Moodle “sometimes does not work”, or that there is a weak server.

One of the platform disadvantages mentioned by 18.4% of respondents is the fact that Moodle is not used by the majority of the UEK teachers. Thus, respondents do not neglect the existence of the platform, on the contrary, they complain about its uncommon use. Such an assessment actually confirms that (at least some) UEK students perceive Moodle as a useful tool but unfortunately used too rarely by their teachers.

Conclusions

In the light of the above results it is clear that the most important factors shaping students’ opinions about Moodle include on the one hand technological aspects of Moodle and on the other hand students’ experience and expertise in Moodle. Hence, to increase students’ use of Moodle as well as to improve their opinions about the platform, administrators should take care of its usability and functionality especially with regard to logging and finding necessary information. At the same time teachers should encourage students to use Moodle since higher experience stimulates more positive assessment of different Moodle aspects.

In order to do so, however, teachers themselves have to use platform more frequently and to a greater extent in education process. A study conducted in 2010 at the Australian Metropolitan University shows that effective implementation of any e-learning system requires additional huge amount of work on the teachers’ part. Unfortunately this is not reflected in the remuneration system [Cahir et al., 2014]. Also Prauzner [2013] draws attention to the fact that preparation of the appropriate teaching content used in remote education is highly time and labor consuming, and additionally the materials require constant updating. This may represent a primary reason of teachers’ reluctance to use Moodle, especially in situations where lecturers are not sure of the courses they will be conducting next years and cannot foresee whether the prepared materials will still be useful in the future. So any form of compensation for the time and effort put into preparing Moodle courses, or at least more flexible treatment of the office hours and time spent on contacts with students can contribute to the decline in teachers’ aversion to the use of Moodle.

There are several limitations of the study. First, the research findings are limited to faculty and students at one institution; namely, University of Economics in Katowice, and therefore the results may not be generalised, especially that the size of the sample was small. Second limitation refers to the measures used in the research. As they were specially designed for the study, they were not adequately tested for reliability and validity before they were used in this project. The methods though can be replicated.

Despite the above mentioned limitations we believe that students' opinions collected during the research can be useful in two ways, i.e. for improving Moodle performance and for designing further research in this area. In our opinion, students' attitude towards Moodle as well as their assessment of Moodle usability and functionality should be tested on a constant basis so the platform can be adjusted to students' needs and expectations. Also teachers' opinions on this topic should be checked which opens a supplementary direction of the future research.

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Designing a Wiki for artistic collaborative learning among a team of teacher training students

Juana Gomez Perez

Introduction

In this project we use a wiki portal in an artistic workshop. The sample comprised a large group of students involved in the project “Nativity scenes”. Our focus is how new media tools in education, in our case specifically the wiki, can support open and collaborative artistic training. Roughly 99% of the group used wiki for the first time. Furthermore, in an artistic area. The students show a positive opinion about the wiki, and the advantages that the use of it can bring to artistic collaborative learning, rather than individual practice. For example in the development of technological, personal and social skills. The project focussed on the tradition of creating nativity scenes in Spain. All the figures are made by hand using Jumping Clay, and represent the typical stories from the Bible. In this research, the wiki is an efficient way for a large and diverse team to work together. It offers a space to connect, share, coordinate, and innovate. When more people are participating, the potential for a more creative, innovative project is higher. This paper shows the links between tradition, artistic expression and technical communication.

1. Theoretical background

Artistic education is an eminently practical discipline. Traditionally, it has been developed in small groups because it requires individual attention. There are a lot of problems associated with its process of teaching and learning.

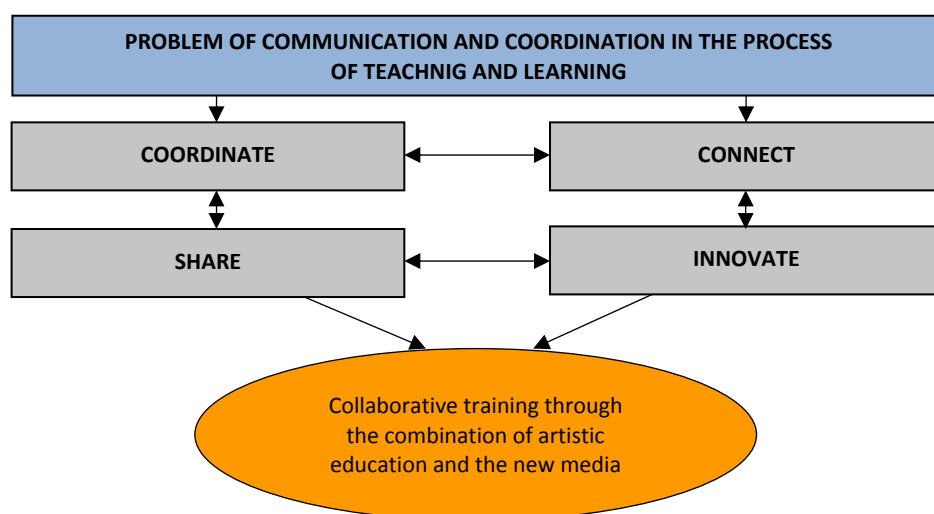
Firstly, it is thought that the most important thing in artistic education is the development of manual skills but it is, more than an aim, a logical consequence of the use of this kind of learning processes. Accordingly, it would be wrong to reduce its benefits to the acquisition of manual abilities.

Secondly, in recent years, we have seen a progressive reduction of hours involved in artistic education in the curriculum. At the same time, an increased in the teacher-student ratio. These circumstances have led to adaptive change in teaching methods. Notwithstanding our strong belief is that unjustified this lesser in the curriculum is unjustified.

From our literature searches we have found numerous publications about the importance of arts education in the development of educational skills, for all education levels. “Las actividades de ocio son indicadores de calidad de vida para todas las personas, ya que son el vehículo mediante el cual las personas obtienen diversión, encuentran amistades y desarrollan habilidades y competencias” (Leisure activities are indicators of quality of life for all people because they are the vehicle through which people get fun, meet friends and develop skills and competencies) [Badía, 2007, pp. 227-248].

Thus, artistic education is particularly suitable in the development of interdisciplinary activities. And its presence in the curriculum will involve a comprehensive training for students, as it is particularly suitable in the development of basic educational skills, such as: collaborative work and communication skills [Garaigordobil, 2007; Calzado, Espada, Báez, 2008].

Figure 1. Proposal



In contrast, the teacher training program in new technologies is very different. As its presence is progressively increased. “La formación del profesorado debería fomentar la innovación a través del cambio gradual de las funciones y los métodos de enseñanza utilizados tradicionalmente por el profesor en el aula

y que tienen que ver esencialmente con los modelos de transmisión y el control del aprendizaje” (Teacher education should foster innovation through a gradual change in the roles and the teaching methods that the teacher traditionally used in the classroom and that deal essentially with models of transmission and control of learning) [Valverde, 2002, p. 15]. In this way, it is noted that both the technical staff and the technological means are increasing.

All in all, however, for the teachers training, both disciplines can provide feedback. “La educación tecnológica se está imponiendo en todos los sectores de la sociedad, muy especialmente en el ámbito educativo y cultural, y se ha convertido en un soporte interactivo ideal para el intercambio de ideas e información” (Technology education is being imposed on all sectors of society, especially in the educational and cultural sphere, and has become an ideal interactive support for the exchange of ideas and information) [Cofán, Ávila, 2007, pp. 169-190]. Thus, students and teachers progressive familiarisation with the new technologies students and teachers, causes them to be used as a common work tool [Vilches, 2015; Durán, Villalba & Espada, 2011]. In short, the Internet, mobile phones and computers have become essential in the teaching and learning process [Gros, 2000].

2. Methodology of research

In the current draft programme of activities, the sample was made up of a group of over 80 people, during the 2014/2015 academic year, in the optional subject “Expresión Artística para la Atención Temprana” (Artistic Expression for Early Childhood), which is given in the eighth semester (4th year of the degree in teacher training for early years education). The idea appears as an alternative solution to solving an eventual problem: The excessive number of students in the workshop because of a computing mistake in the enrolment period.

The large number of participants originated space and communication problems (Figure 1). As a result, dissatisfaction between the students and the lecturer. This situation caused a change in the approach to the subject. Thus, a rethinking of a field, which is traditionally experimental, practiced and designed for small groups was opted for.

The project “Belén Infantil Crisol de Culturas” (Nativity scenes created for childhood as a melting pot of cultures) was focused on the traditional recreation of nativity scenes in Spain. The composition was formed by more than 100 fig-

ures handmade in clay and showed the typical scenes from the Bible. In the development of the activity, six workgroups were created, each one composed of around 15 people and a leader. We used the wiki (Figure 1) as an educational resource to coordinate, connect, share and innovate, for a large group involved in a big project [Edwards, Domínguez & Rico, 2008]. The experience was developed during the months of November and December and finished with its public exhibition.

The aim promoted was collaborative training through the combination of artistic education and the new media. So, “all this process can be made visible to others, annotated and discussed in the mediated dialogue that the wiki as social space allows. The usual discussion section merely offers a simple open box which can then be difficult to follow because the sequence of entries and responses is not organized” [Young, Pérez, 2012, p. 7].

Apart from that, the goal was providing new resources to be applied in the future in education [(Kumar, 2009; Ruth, Houghton, 2009; Wheeler, Yeomans, & Wheeler, 2008 cited in Young & Pérez, 2012)]. From many points of view, these are the competencies of the Degree that were managed:

C11. Reflecting on classroom practices to innovate and improve teaching. Acquiring habits and skills for cooperative and autonomous learning and promoting them in students.

C73. Promoting the awareness of artistic expression and artistic creation.

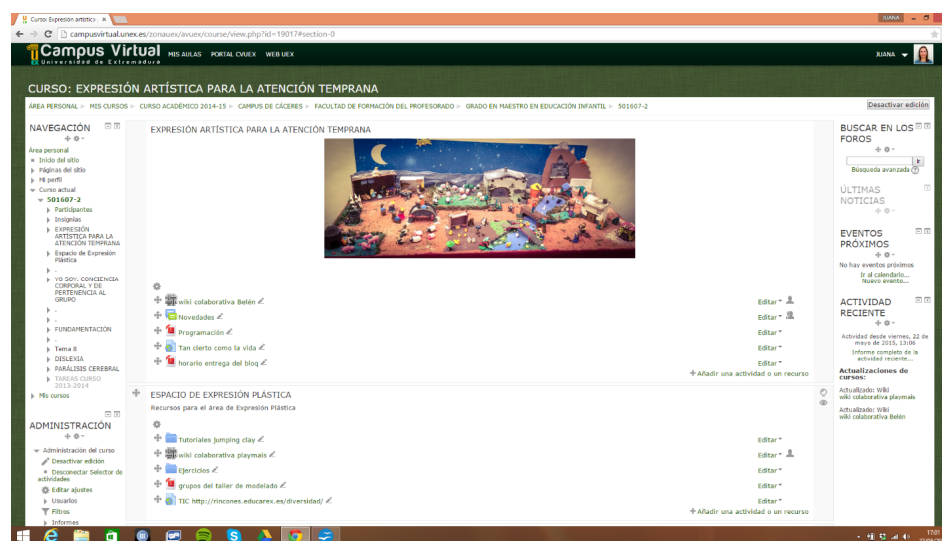
C91. Using the new communication technologies as a tool for intellectual work and as an essential element of information, learning and communication.

C95. Maintaining an attitude of innovation and creativity in the practice of their profession.

3. Results

Approximately 99% of students have used the wiki (Figure 2) for the first time, and more particularly, in an artistic area. The students showed a positive attitude to the use of the wiki and they realised that it was really useful in the collaborative work. The proposed activities included three main aspects.

Figure 2. Collaborative wiki is in the virtual space of the group

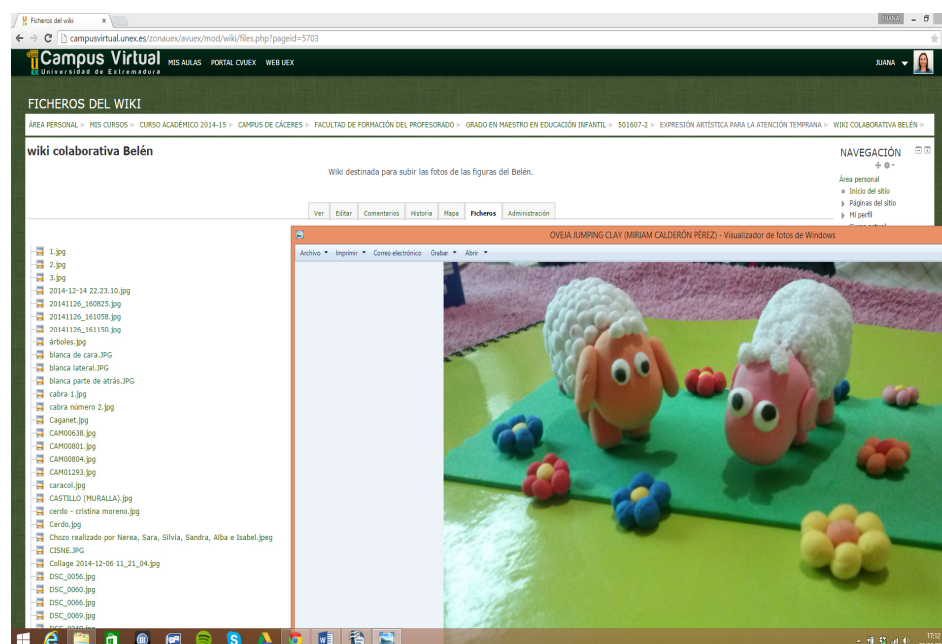


We started with a Jumping Clay modelling course, it was designed for the training of the six leaders (5 students plus the lecturer), and proved beneficial to the programme. In this way, the leaders could act as teachers of their classmates throughout the three different stages of the educational process: programming, instruction and evaluation. So, they were in charge of programming, teaching and evaluating their respective groups.

At the programming stage, we proceeded to the distribution of the figures into six groups: animals, vegetation, objects, buildings and human figures. In addition, the distribution influenced the wiki design, which was also organised in six sections, one for each working group. In the wiki appeared the names of the members in each group and their corresponding figures. After the distribution of the parts, we proceeded to individual research about the different figures, in order to design the preliminary sketches.

Next, we faced the instruction issue. In the wiki appeared a guide about the mixtures of colour, basic shapes and other rules of proportions because of the uniform result e.g.: size of the figures, style or colours. When a piece had been finished, we proceeded to its photographic record, in this way each work would be visible for all the teams in the wiki (Figure 3). Regarding the contents developed, it was focused on the understanding of visual language for childhood artistic education, with the aim of allowing the design of teaching strategies in the classroom, and geared to enriching the communicative and the expressive skills of students through the graphic-visual language in early years education.

Figure 3. One of the wiki's archives



In the end, the leaders had evaluated the activity in an objective and accurate way. Indeed, the evaluation had included aspects like the complexity of the models, the constructive engagement and a collaborative attitude with the group. These activities have allowed analysis and synthesis of the visual language. In addition, the students learned the importance of teamwork to solve problems and make decisions in this area. All this has been focused on the development of creativity and freelance learning.

Conclusions

The purpose of this study was to present new educational resources, which can be used to solve problems of communication and coordination in the process of teaching and learning. Furthermore, feedback from student members indicates that the overwhelming majority of them were satisfied with the process. The data confirmed that “Es la expresión artística una buena vía para compartir, para disfrutar en grupo, para respetar y valorar nuestras propias aportaciones y las de los demás” (artistic expression is a good way to share, enjoy group activity, respect and value our own contributions and those of others) [Barrios, Gómez, 2014, p. 34].

It was demonstrated that the workshop also turned out well. Thus, the students were really motivated during all the process. And more so, when the construction work (Figure 4) was exhibited in an old palace in the centre of the city at Christmas. More and over, when it was rewarded with the creativity prize at the local Nativity Scenes competition.

Figure 4. Exhibition of the composition



Apart from that, “a propósito de esta experiencia, nos hemos aproximado al conocimiento de la diversidad cultural del nuevo espacio europeo, iberoamericano y africano, partiendo del fomento de las tradiciones locales al objeto de una formación, integral, multicultural e integradora” (through this experience, we have come closer to the cultural diversity of the new European, Latin-American and African areas, based on the promoting of local traditions with the aim of an integrated, multicultural and inclusive education) [Gómez, 2012].

This proposal is a small contribution to solve the problems of communication and coordination in creative and collaborative training through artistic education and new media. As a result, with the use of new technologies in the artistic workshop, we have learned a little more about art through the new technologies, and a little more about the technologies through art.

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Telecare and telemedicine systems as an educational tool in the implementation of programs of study courses: Nursing and occupational therapy

Dariusz Luboń & Janusz Wietecha

Introduction

The delivery of health care services, where distance is a critical factor, by all health care professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of health care providers, all in the interests of advancing the health of individuals and their communities.

Dynamically developing telemedicine systems have found their place in health care, most often used by general practitioners to communicate and care for their patients. Capabilities of these systems extend the with each passing month. There are applications and diagnostic modules for tests at the patient's home, are also part of telemedicine surgical robots allow perform surgery by specialists at a distance, and the common becomes tele-interpretation imaging results by radiologists. Telecare systems are designed to provide optimum health safety of users, by using devices and the Internet and mobile nets. On the basis of demographic and epidemiological projections, professionals of health care, including nurses and occupational therapists will take care of the constantly growing population of patients/clients. In order that in the near future to ensure proper quality of care, they will be forced to use the latest technology achievements in the field of telecommunications. Education in these professions should include knowledge and practice in the application, opportunities and adequate to the predisposition of the patient/clients selection of devices and applications.

1. Theoretical background

Telemedicine, a term coined in the 1970s, which literally means "healing at a distance" [Strehle, Shabde, 2006], signifies the use of ICT to improve patient outcomes by increasing access to care and medical information. Recognising

that there is no one definitive definition of *telemedicine* – a 2007 study found 104 peer-reviewed definitions of the word [Sood et al, 2007] – the World Health Organization has adopted the following broad description:

“The delivery of health care services, where distance is a critical factor, by all health care professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of health care providers, all in the interests of advancing the health of individuals and their communities” [WHO, 1998].

The many definitions highlight that telemedicine is an open and constantly evolving science, as it incorporates new advancements in technology and responds and adapts to the changing health needs and contexts of societies.

Some distinguish telemedicine from telehealth with the former restricted to service delivery by physicians only, and the latter signifying services provided by health professionals in general, including nurses, pharmacists, and others. However, for the purpose of this report, telemedicine and telehealth are synonymous and used interchangeably. Four elements are germane to telemedicine:

1. Its purpose is to provide clinical support.
2. It is intended to overcome geographical barriers, connecting users who are not in the same physical location.
3. It involves the use of various types of ICT.
4. Its goal is to improve health outcomes.

2. Telemedicine – the current use

Telemedicine applications can be classified in two basic types, according to the timing of the information transmitted and the interaction between the individuals involved – be it health professional-to-health professional or health professional-to-patient [Craig, Patterson, 2005]. Store-and-forward, or asynchronous, telemedicine involves the exchange of pre-recorded data between two or more individuals at different times. For example, the patient or referring health professional sends an e-mail description of a medical case to an expert who later sends back an opinion regarding diagnosis and optimal management. In contrast, real time, or synchronous, telemedicine requires the involved individuals to be simultaneously present for immediate exchange of information, as in the case of videoconferencing [Rao, Lombardi 2009]. In both synchronous and asynchronous telemedicine, relevant information may be transmitted in a variety of media, such as text, audio, video, or still images. These two basic approaches to telemedicine are applied to a wide array of services in diverse settings, including teledermatology, telepathology, and teleradiology [Currell et al., 2000].

The majority of telemedicine services, most of which focus on diagnosis and clinical management, are routinely offered in industrialised regions. In addition, biometric measuring devices such as equipment monitoring heart rate, blood pressure and blood glucose levels are increasingly used to remotely monitor and manage patients with acute and chronic illnesses. Some predict that telemedicine will profoundly transform the delivery of health services in the industrialised world by migrating health care delivery away from hospitals and clinics into homes [Heinzelmann, Lugn & Kvedar, 2005].

The adoption of telemedicine systems requires acceptance by both the patient and the health professional involved; both parties may be more familiar with face-to-face encounters and resistant to utilise telemedicine services, or unaware of their potential benefits [Thara, John, Rao, 2008; Tomasi, Facchini & Maia, 2004]. In particular, health-care professionals have reported a “fear of the unknown” with regard to handling computers, an anxiety that telemedicine will lead to job loss, an apprehension that the initially high investment required is not viable, or a concern that the bedside presence of consulting physicians in local hospitals will decline [Bagchi, 2006]. Fear that the integration of new communication technologies into telemedicine systems may alter existing work practices, challenge physician referral methods, or interrupt workflow may also affect physician acceptance of telemedicine [Kifle, Mbarika & Datta, 2006]. Designing systems that enhance rather than dislodge current work practices and effectively communicating them to practitioners presents a challenge and an opportunity to ensure appropriate and meaningful uptake of telemedicine systems within low-income settings [Sood, Bhatia, 2005]. As with many other types of health care interventions, the lack of information available regarding legal policies, guidelines, or minimum standards concerning the use of telemedicine in the clinical context may also be preventing the adoption of such technologies.

To obtain an impression of the current state of telemedicine service provision, four of the most popular and established areas of telemedicine were surveyed specifically. The survey examined four fields of telemedicine:

1. Teleradiology – use of ICT to transmit digital radiological images (e.g. X-ray images) from one location to another for the purpose of interpretation and/or consultation.
2. Telepathology – use of ICT to transmit digitised pathological results (e.g. microscopic images of cells) for the purpose of interpretation and/or consultation.
3. Teledermatology – use of ICT to transmit medical information concerning skin conditions (e.g. tumours of the skin) for the purpose of interpretation and/or consultation.
4. Telepsychiatry – use of ICT for psychiatric evaluations and/or consultation via video and Telephony.

2. The nurse and an occupational therapist – professionals of healthcare system

Nursing is a profession within the health care sector focused on the care of individuals, families, and communities so they may attain, maintain, or recover optimal health and quality of life. Nurses may be differentiated from other health care providers by their approach to patient care, training, and scope of practice. Nurses practice in a wide diversity of practice areas with a different scope of practice and level of prescriber's authority in each.

In the European Union, the profession of nurse is regulated. A profession is said to be regulated when access and exercise is subject to the possession of a specific professional qualification. In order to become a registered nurse in Poland, one must complete a program recognised by the Ministry of Science and Higher Education and the Ministry of Health.

Occupational therapy (OT) is the use of assessment and treatment to develop, recover, or maintain the daily living and working skills of people with a physical, mental, or cognitive disorder. Occupational therapists also focus much of their work on identifying and eliminating environmental barriers to independence and participation in daily activities.

The role of an occupational therapist is to work with clients, first, to help them achieve a fulfilled and satisfied state in life through the use of purposeful activity. Second, his role is aimed at interventions designed to achieve functional outcomes which promote health, prevent injury or disability and which develop, improve, sustain or restore the highest possible level of independence.

Conclusions

Due to the achievements in medicine, the health system and demographic people of Poland and Europe live longer. The number of citizens over 65 years is growing steadily. Social policy in our circle of civilization seeks to carry out actions aimed at maintaining optimal activity of citizens in professional and social life as long as possible. The problem in this field is the shortage of health care professionals, including nurses and occupational therapists who can both maintain standards of quality of care and provide their services to the largest population of patients/clients. A possible solution for the future will introduce the daily practice of mobile technology development, allowing for complementary contact with the patients. Internet consultations with the periodical review of the basic parameters such as ECG, blood pressure, arterial oxygen saturation, blood glu-

cose, body weight, temperature and others are also to be considered. There are already available ICT systems adapted to monitor patients/clients regardless their location, for instance technical devices measuring auxiliary equipment efficiency, battery charge level in a wheelchair, connection of a house security system including gas, smoke or flooding sensors. To prepare for such professional challenges already at the stage of studies educational programs should be introduced to make full and proper use of telemedicine achievements, including electronic mobile devices and applications constantly emerging understood as a utility software allowing direct contact with a man, or performing interact with others user IT equipment.

Mobile technologies hold great promise for keeping people healthy, managing diseases, and lowering healthcare costs. For years, telehealth has provided clinical services for individuals who lacked physical access: farmers in remote communities, soldiers near the battlefields, inmates in prisons. Now, these technologies have demonstrated the ability to provide benefit to almost any individual. Mobile devices are the most personal technology that consumers own. They enable consumers to establish personal preferences for sharing and communicating. They can enable health and wellness to be delivered through mass personalisation.

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The technological support for teaching methodology in terms of Bloom's Taxonomy

Tomasz Eisenhardt

Introduction

The aim of this article is presentation of very actual problem, which is holistic approach to the technological support of education, especially higher education. The background for these deliberations is Bloom's Taxonomy. The author, based on this methodology, proposes practical solutions to support blended learning using virtual learning environment.

1. Theoretical background

Benjamin S. Bloom and his team (Committee of College and University Examiners) are authors of the classification of learning objectives well known as the Bloom's Taxonomy. It divides educational objectives into three domains:

- cognitive domain: about the mental skills (*knowledge*),
- affective domain: concerning growth in feelings or emotional areas (*attitude on self*),
- psychomotor domain: for a manual or physical abilities (*skills*) [Bloom ed., 1956].

The cognitive and affective domains were described in books by authors from the same team [Bloom ed., 1956; Krathwohl et al. eds., 1964]. However, cognitive domain was named Bloom's Taxonomy, and affective domain Krathwohl's Taxonomy. The third domain explication was conducted by Elizabeth Simpson [Simpson, 1972], creating another appellation occurring in literature, which is: Simpson's Taxonomy.

What characterise mentioned taxonomies is focusing on achieving educational goals. The goals should be realistic, achievable for learners, well described, clear, understandable and measurable [Jankowski, 2013]. Teachers should focus on every of these domains. Cognitive skills are focused on knowledge, understanding and critical thinking. Achieving affective goals leads to the growth of awareness: attitudes, emotions, and feelings. Whereas psychomotor goals are responsible for changes and development in behaviour and skills [Benjamin Bloom's..., 2012].

- knowledge,
- comprehension,
- application,
- analysis,
- synthesis,
- evaluation.

Figure 1. Bloom's Taxonomy



That domain had been late

- remembering – define, match, outline, name, describe, underline, repeat, recall, reproduce, recognise, arrange, list, state, record,
- understanding – defend, characterise, give an example, assort, discuss, generalise, identify, exemplify, classify, locate, restate, illustrate, tell, paraphrase, summarise, convert, rewrite, translate, report, review, extend, explain, express,

- applying – utilise, interpret, make use of, manipulate, assemble, sketch, compute, operate, discover, show, dramatise, predict, prepare, construct, practice, use, implement, execute, employ, demonstrate, schedule, apply, change, modify,
- analysing – analyse, debate, divide, calculate, separate, compare, relate, test, examine, attribute, deconstruct, distinguish, differentiate, solve, categorise, diagram, infer, select, experiment, question, inspect, contrast,
- evaluating – determine, criticise, rate, apprise, judge, revise, check, estimate, justify, assess, verify, conclude, cogitate, evaluate,
- creating – formulate, generate, combine, work out, write, plan, produce, design, rearrange, reconstruct, reorganise, elaborate, compose, construct, compile, create, set up, propose, manage, collect, assemble, organise.

Categories and actions (verbs), according to Kratwohl's Taxonomy, are:

- receiving – accept, give, select, identify, locate, listen (for), name, describe, follow, ask, differentiate, respect, hold, use, point to, choose,
- responding – read, practice, appreciate, conform, discuss, answer, reply, tell, label, write, commend, help, greet, present, acclaim, question, reports, respond to, recite, perform, comply with, spend leisure time in, comply, assists, select, volunteer,
- valuing – accept, participate, read, debate about, demonstrate, subsidise, share, inform, initiate, join, refuse, describe, follow, show, polemise, work, report, differentiate, study, form, justify, support, select, explain, complete, invite, propose, relinquish, increase measured proficiency in,
- organisation – arrange, examine, balance, defend, discuss, generalise, identify, integrate, combine, modify, relate, formulate, organise, compare, remain devoted, prepare, order, develop, adhere, synthesise, theorise, prioritise, recognise, explain, complete, alter,
- characterisation – discriminate, qualify, question, display, undertake, manage, act, require, perform, solve, resolve, revise, listen, serve, resist, verify, avoid, use, influence, show, propose, modify, be rated high in the value [Kratwohl et al. eds., 1964; Jankowski, 2013].

Whereas psychomotor domain, according to Simpson's Taxonomy, contains following categories and actions (verbs):

- perception – select, adjust, listen for, separate, relate, distinguish, describe, identify, differentiate, isolate, estimate, recognise, choose, detect,
- set (mindset) – be ready, respond, show, state, proceed, display, react, move, start, recognize, explain, begin, volunteer,
- guided response – perform, imitate, copy, mix, follow, emulate, respond, reproduce, react, trace,
- mechanism (basic proficiency) – construct, build, demonstrate, mend, manipulate, measure, heat, repair, display, organise, grind, dissect, drive, dismantle, sketch, calibrate, fasten, fix, use, assemble,

- complex overt response (expert) – construct, build, demonstrate, mend, manipulate, measure, heat, repair, display, organise, grind, dissect, drive, dismantle, sketch, calibrate, fasten, fix, use, assemble,
- adaptation – adapt, revise, modify, use, rearrange, respond, reorganise, vary, perform, change, alter,
- origination – arrange, build, initiate, compose, construct, combine, design, make develop, create, originate [Simpson, 1972; Jankowski, 2013].

Categories in each taxonomy had been described with actions. The actions are shown as verbs and they are the medial part of the circular model. The last, outer part of the model, shows tools and methods, which can be used to achieve intended educational goals. These instruments are in certain sense also measures, which can be used to determine if the goals have been achieved.

2. Research methodology

The following research questions were asked:

- Whether is it possible to replace a holistic educational process in line with Bloom's Taxonomy by remote and e-learning methods?
- To what degree can virtual learning environment work effectively without the teachers?

To answer these questions there was conducted an identification of information and communication technologies, network applications and e-learning solutions that can be used as a support to achieve the educational goals described in Bloom's Taxonomy.

3. Results of research

The e-learning realisation and creating of VLE (virtual learning environment) is usually associated with e-learning platforms, such as Moodle, Blackboard, Sakai, KeneXa, DigitalChalk, eFront LMS, ATutor, Claroline, OLAT, Ilias and others. In fact, e-learning platforms possess functionalities, which allows them to create independent VLE. Unfortunately, platforms do not include all of the possible technologies, that is why in case of greater demands the need of VLE extension to additional and necessary technologies and services is required.

Mentioned additional means include:

- AT (authoring tools) and rapid e-learning tools – components, which significantly increase visual features of the presented didactic contents, as well as allow to test the knowledge,
- webcasting and webcasts – network playable movie presentations,

- screencasting and screencasts – movie presentations showing activities depicted on a computer screen, enhanced with additional graphics and narration, these films are also prepared network playable,
- webinar – distance seminary using a communication software, which allows for simultaneous audio-video transmission and chat room, this kind of applications usually allow preparing simple drawings, transmission of files, sharing the desktops and other interactions.

Figure 2. The example of comprehensive VLE, which contains few elements

a) e-learning platform

b) AT

Co to jest filozofia?

Pytania o poznanie i działanie

Stawiając te i inne pytania, doświadczamy siebie jako osoby myślące, posiadające zdolność refleksji nad sobą samym, refleksji nad otaczającym światem, nad możliwościami poznania tego świata. Jednocześnie mamy świadomość popełnianych błędów, pomyłek, często jesteśmy świadkami niezrozumiałej dla nas różnorodności opinii na jeden, wydawałoby się oczywisty, temat.

Rodzi to kolejne pytania:

- **O MOŻLIWOŚCI POZNAWCZE CZŁOWIEKA** — czy jesteśmy w stanie poznać rzeczywistość? W jaki sposób poznajemy? Co jest przyczyną błędów?
- **O PRAWDĘ** — czy istnieje, czy jest poznawalna?

Jest jeszcze jedna sfera ludzkiego życia, której człowiek nigdy się nie pozbędzie. Jest to **MORALNOŚĆ**. Doświadczamy jej przede wszystkim w sytuacji dokonywania wyboru. Wybierając stajemy się odpowiedzialni za to, cośmy wybrali, na co się zgodziliśmy.

W tym kontekście pojawiają się pytania o **wolność, dobro, zło**:

Przykład

Przykład pytań z dziedziny etyki:

- Czy jestem wolny i odpowiedzialny za to co czynię? Czy istnieją granice wolności? Jak i jakich dokonywać wyborów?
- Co to jest dobro? Co to jest zło? Czy istnieją kryteria dobra i zła. Czy istnieje zło i co jest jego źródłem?
- Czy prawo moralne ma charakter uniwersalny czy też jest ono wynikiem konwencji, umowy społecznej?

c) rapid e-learning tools

The screenshot shows a web-based interface for a rapid e-learning tool. The main content area displays a diagram titled "Kompresja plików graficznych" (Compression of graphic files). The diagram consists of a central yellow circle with a briefcase icon, surrounded by five yellow boxes connected by a circular line:

- Wielkość** (Size): Pliki graficzne są z reguły dość „ciężkie”, to znaczy zabierają sporo pamięci.
- Kompresja** (Compression): Algorytmy umożliwiające ograniczenie wielkości plików.
- Kompresja bezstratna** (Lossless compression): Obraz jest identyczny pod kątem jakości ze swoim pierwowzorem.
- Format** (Format): Pliki graficzne muszą mieć określony format.
- Kompresja stratna** (Lossy compression): Ma wpływ na jakość obrazu. Niektóre szczegóły mogą zaniknąć.

The interface includes a top navigation bar with "Zasoby", "Rysowanie", and "Narracja". A small video window in the top right shows a presenter. The bottom control bar features a "Spis treści" (Table of contents) button, a play/pause button, a progress indicator (32 / 40), a timer (00:05 / 00:44), and buttons for "Cofnij" (Back) and "Dalej" (Next).

d) webcasts

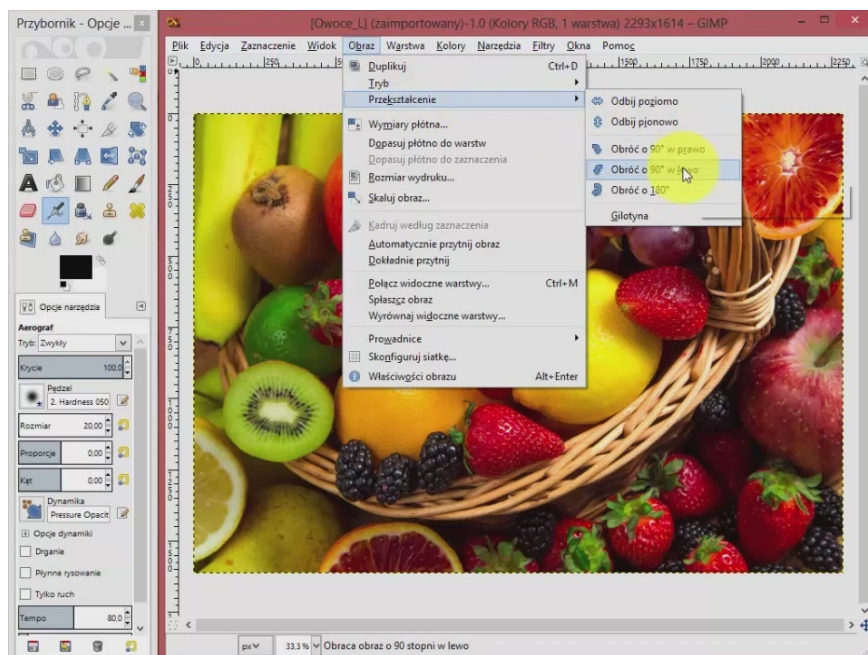
The screenshot shows a webcast interface from "WYŻSZA SZKOŁA BANKOWA w Poznaniu". The top right corner indicates "Część 5" (Part 5). The main content area is titled "Koszty według rodzajów ⇒ Układ rodzajowy kosztów" (Costs by types ⇒ Type arrangement of costs). It lists seven types of costs:

1. Amortyzacja
2. Zużycie materiałów i energii
3. Usługi obce
4. Podatki i opłaty
5. Wynagrodzenia
6. Ubezpieczenia społeczne i inne świadczenia
7. Pozostałe koszty rodzajowe

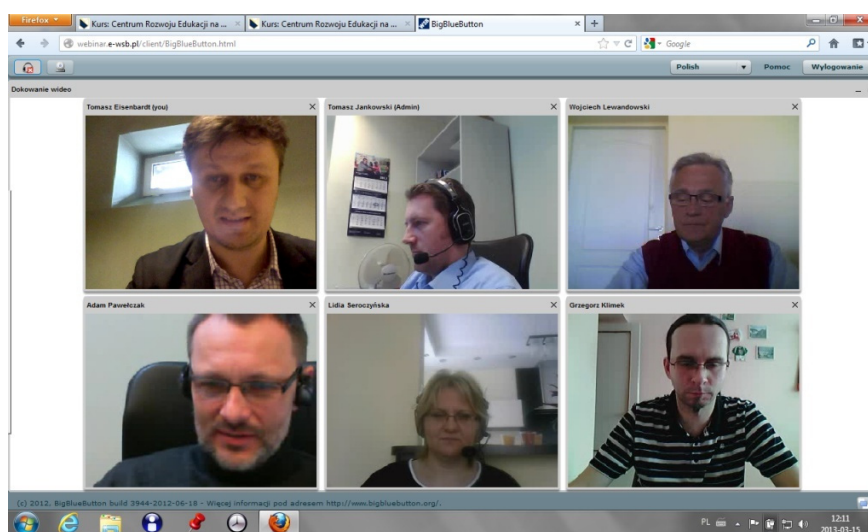
Below the list, a bullet point states: "W układzie rodzajowym ujmuje się koszty w okresie ich poniesienia bez względu na to, jakich okresów dotyczą." (In the type arrangement, costs are recorded in the period of their incurrence regardless of the periods they relate to.)

The interface includes a video window on the left showing a presenter, Małgorzata Węgrzyńska, with the text "WYKŁAD 10: WZROSTAJĄCY SIĘ STANOWISKO GŁÓW KIEROWNICTWA" and "Wykład 24-11-2012, Cz.5". The bottom control bar features navigation buttons (list, back, play, forward) and a "Widok" (View) dropdown menu.

e) screencasts



f) webinars



Source: School of Banking in Poznan platform (s.a.).

E-learning platforms more and more often act as LORs (learning object repositories) – some kind of learning objects storage. MOOCs (Massive Open Online Courses) are also very popular, and they are nothing more than learning object repositories with free access and no charge.

Therefore nowadays e-learning is not only based on e-learning platforms but also equally on technologies, which are included. The effects of application of mentioned technologies are learning objects. Moreover, e-learning platform is very often an admittance to the worldwide virtual web with its infinite base of learning objects. Some of these e-learning technologies are shared as hypertext links that can be launched from the e-learning platform, whereas others are integrated with the platforms via the adequate plug-ins. It is worth mentioning here:

- virtual worlds – projection of the real world in the cyber space, the most popular one is Second Life,
- social e-learning platforms – partly similar to e-learning platforms, but targeted on social learning, the role of that kind of platform can be taken by some of the social portals,
- e-portfolios – electronic versions of portfolio,
- and the most common and well known games and simulations.

A separate subject is the r-learning – the use of robotics in education. Robots can support or even replace the teacher [Han, 2010]. Typical educational robots resemble a human or an animal and have a height of several tens of centimetres. Such robots are used in South Korea. They have got many successful applications in early education [*R-learning system...*, 2012] and in language teaching [Han, 2010].

The above-mentioned e-learning technologies have been analysed in terms of their educational usefulness written in particular taxonomic domains. Each time it was decided to extract only three the most predominant categories for each technology. The basis of the verdict was associating functionality of each technology with verbs that describe different taxonomic domain categories. Results of the analysis are presented in the table below.

Table 1. E-learning technologies and their dominant taxonomy categories

E-learning technology	Cognitive domain (according the Retrive Bloom's Taxonomy)	Affective domain (according the Kratwohl's Taxonomy)	Psychomotor domain (according the Simpson's Taxonomy)
1	2	3	4
e-learning platforms	remembering, understanding, evaluating	.	.
LORs/MOOCs	remembering, understanding	valuing	.
AT	remembering, understanding, evaluating	.	.
rapid e-learning tools	remembering, understanding, evaluating	.	.
webcasts	remembering, understanding	receiving	.
screencasts	remembering, understanding	receiving	.

Table 1 cont.

1	2	3	4
Webinars	analysing	receiving, responding	·
social e-learning platforms	·	valuing receiving, responding	·
e-portfolios	creating	valuing, characterisation	·
virtual worlds	creating, applying	valuing	·
games and simulations	remembering	·	adaptation, guided response
r-learning	remembering	·	adaptation, perception

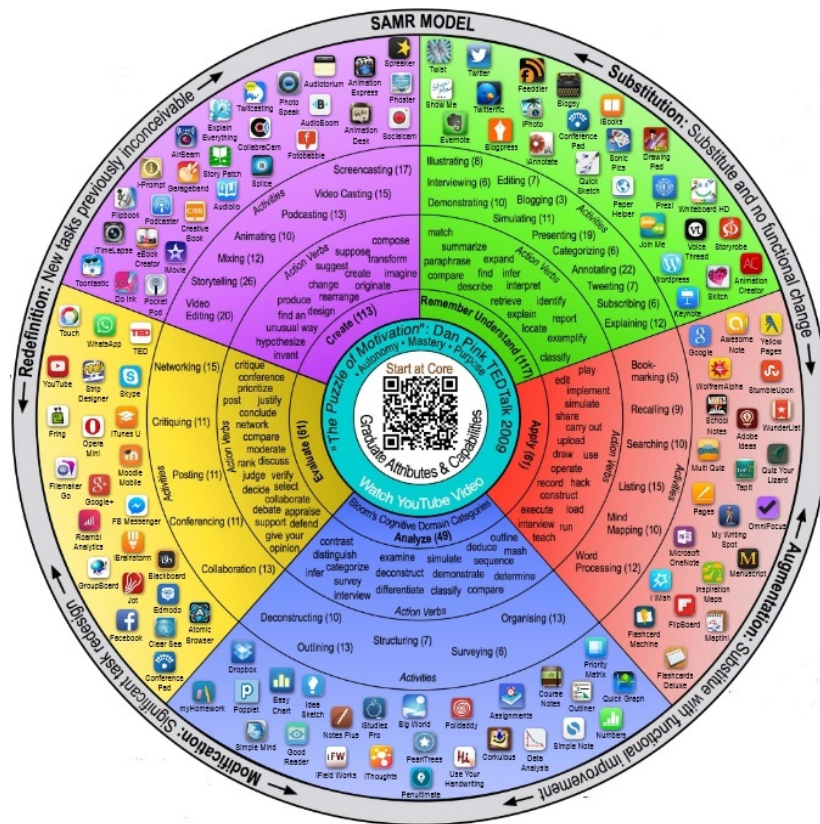
The most interesting observation that has occurred during the analysis is the polarisation of the vast majority of e-learning technologies toward the cognitive domain.

4. Discussion

J. Hart indicates exactly 100 tools: computer programs, internet portals, network services and communication mediums, which can be used as tools to support widely understood education [Hart, 2014]. However, it should be noted, that the mentioned tools not necessarily were created to be used in education. More often the main motives to create them were communication or entertainment. Nonetheless, direct referring to Revised Bloom's Taxonomy became very popular to point out impressive and still growing number of, for example, network applications, which – in opinion of other authors – are equal to the task of realisation any (not just cognitive) educational targets [Carrington, s.a.; Jankowski, 2013].

Theoretically, it can be assumed, that all these tools can create virtual learning environment. Theoretically, it is possible to use most of these tools in teaching. However, such multiplicity does not solve the issue for any of the teaching cycles, even the ones based on Bloom's Taxonomy, focused on targets. It resembles the process of building a house, not carried out by one specialised company in comprehensive manner, but by many small companies, each one of them possessing good but very narrow specialisation. It is not hard to conclude, that such a process can be extremely time-consuming and not necessarily successful. Situation is very similar with education in dispersed environment.

Figure 3. Example of assignment web technologies to elements of Revised Bloom's Taxonomy



Source: [Carrington, s.a.].

Educational process, dispersed and formed with “small blocks” has to fail, as it is very hard to control and eventually very expensive. Development of educational methodology based on such a wide *instrumentarium* can take years. The cure for this problem can be integration of the *instrumentarium*.

The integrator's role of educational services is fulfilled by e-learning platforms. In fact, the platforms contain large number of tools and services, which could be supported by mentioned earlier, very dispersed, virtual learning environment. Therefore, wherever the use of e-learning platform is possible – it is sensible to do so. Only when the platform itself appears to be insufficient, it is worth to reach for external tools and network services.

Conclusions

Although it was published more than a half century ago, Bloom's Taxonomy is still fundamental to good teaching and learning. Bloom's Taxonomy has an application in education on every level. It is of high significance in Polish higher education. Its guidelines are principle for *Framework for Higher Education Qualifications* (Krajowe Ramy Kwalifikacji), implemented in 2011 in Polish higher education [Rozporządzenie Ministra..., 2011].

Bloom's Taxonomy can be notably well adapted for the needs of e-learning. However, it has to be noted, that different e-learning methods, techniques and tools, can mainly cope only with the cognitive domain of taxonomy.

Answers to research questions asked:

1. Replacement of traditional teaching is possible, based on Bloom's Taxonomy, but at present mainly in cognitive terms. Prevalent e-learning seems to concentrate mainly on passing the knowledge and assessment of the level of understanding it.
2. The e-learning's focused on remembering and understanding creates sort of niche in areas of other elements. Mainly in affective and psychomotor domains. Therefore it is much wiser and safer step to use blended learning in place e-learning conducted remote way only.

Affective and psychomotor domains can be supported by e-learning, but it has to be stressed, that electronic education not always is able to ensure achieving didactic goals and its intentions in full meaning. This allows to state, that in some aspects of education the use of blended learning method, based on combining e-learning with traditional methods of education, is recommended. That type of solution allows to avoid problems, which are creating some imperfections in electronic education. On the other hand, realisation of education where e-learning has no applications, most probably, in time will lose on its importance. It is proved by the fact, that nowadays learners have access to the world's best lectures from the world's best academics thanks to MOOCs (Massive Open Learning Courses). It should be expected, that adaptation of new technologies may cause the effect, that e-learning will be able to efficiently support realisation of educational goals also in affective and psychomotor areas. This could be the next step in development of e-learning. Or perhaps the new trend will be a sufficient breakthrough to be called e-learning 3.0. In the meantime it is worth to reach for the blended learning – as a method which has been tested, is effective and not affected by the described earlier problems.

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Use of online collaborative writing tools by students of higher education

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Introduction

Our teaching and learning environment has changed since Internet became accessible to everybody with a mobile devices that can be connected to the web. It is no longer sufficient to use face to face methods to deliver knowledge, it is necessary to used online collaborative blended learning possibilities. This paper will focus on the educational possibilities Pbworks offers and the experience of using it by students of Management at Academy of Physical Education in Poland for collaborative writing activities. Pbworks is a content development and management technology that enable an interactive and intercreative engagement among students and between students and teachers. 42 students using this platform during their lessons filled out a questionnaire placed on the web. This study confirmed our thesis that this technologies enable desirable practices such as collaborative content creation, peer assessment, formative evaluation of student work, individual as well as group reflection on learning experiences.

1. Theoretical background

Collaboration is a key component in the provision for the creation of “effective learning environment”, as it gives students an opportunity to discuss, arguing, negotiating, and reflection on the current beliefs and knowledge. The learner becomes engaged in building knowledge in the process of discussion and interaction with experts and classmates.

Collaboration and cooperation is working together to achieve common goals. Through collaborative actions, the individuals are trying to get results beneficial both for themselves and for other group members [Donelan, 2010, pp. 83-88]. Collaborative learning, no doing any differences like: online – offline collaborative learning, online – offline collaborative writing tools – blended collaborative learning, but only as a learning based on collaboration is the usage of small groups for training purposes so that the students work together to achieve the best possible learning outcomes [Fransen, Kirschner & Erkens, 2011].

For our experiment members of the class were divided into small groups (3 to 5 people each group), which receive instructions from the teacher. Students take notes (see Figure 1) about the topics to be discussed and received clear instruction how to use the online collaborative writing tool. Students worked online during and outside of the classroom. The teacher became a mentor and tried not to interfere in their content building. The tool used for the experiment was Pbworks, on a task until all members of the group understand and execute them completely. As a result of the collaborative efforts, participants attempt to achieve a common benefit, so that all members of the group have the benefit of the efforts of others.

Figure 1. Students taking notes



Bearing in mind that all group members share a common fate (responsible for all activities is the group and no single persons), being aware that the achievements of one person are caused jointly by them and by their colleagues. The actions are inter-related between them and the results will be achieved only if everybody cooperated with each other, feeling proud and jointly celebrate when one of the members of the group is honoured by their achievements.

In online collaborative learning situations, there is a positive correlation between reaching the goals by the students and their personal satisfaction. They realise that they achieve their educational goals only if the other students from their group will also reach their educational goals. For instance, the success of the team member to create the webpage using Pbworks, making a multimedia presentation available in Internet through Slideshare or Slideboom, taking care about the project management through Dotproject or Blue Ant, depends both on their personal efforts and the efforts of other team members, who bring the necessary knowledge, skills and resources [Chavez, Romero, 2012, pp. 3068-3073].

2. Students strategies to enable collaborative writing

Creating a method to address each student learning experience with different social media technologies was a part of the “Web Communication Management” and “Information System in Sport and tourism” courses. They were asked to provide a set of materials relating to the subject in the form of an HTML document, available at the class website. In addition, the instructor presented a few examples of how virtual environments can be used [Deng, Lau, 2014, pp. 12-19] and how such a learning experience can be created and developed.

In the first four weeks of classes, the literature related to the topic in the form of class discussion, workshops, material available on the web was reviewed to be able to create some content and later, through mutual collaboration and during lessons and on their spare time, create a website by using Pbworks. Next weeks were devoted to a discussion led by students and presentation of materials using online presentations (slideshare, slideboom, prez), The strategies implemented by students cover precisely the content of this paper.

All students were encouraged to take advantage of Pbworks after classes. To provide some control in the class management, a personal password was given to each student participating in the experiment. In the Campus, students are able to use PCs in the library and free of charge Internet connection through WIFI in their laptops, tablets and smartphones. That is the reason why we encourage them to use the same tools at home or workplace where they will have Internet connection. A leader, in each group, responsible for the proper conduct of the online collaboration group was appointed.

As part of the University’s initiative to try flexible methods of “collaborative writing – learning tools” these courses were the first ones which experimented with such a combination of measures. Therefore, the students were novices at this, however, they willingly and enthusiastically came up to the application of these technologies. In this way, the strategy of “collaborative writing” has become the experiment and resulted in some interesting conclusions.

3. Implementation of online collaborative writing environment

It was decided to use Pbworks environment for the courses’ aims, because it is simple to create and edit Web sites that allow users to create pages, subpages, edit their contents, add media and comments in an easy WYSIWYG editor. It makes a team work on a mutual project easy.

Pbworks has provided our students and teacher for an easy access to a user-friendly website, serving to build community and to work outside the University's Campus. This is a great tool to easily share documents, images, audio and video, which teachers and students find and want to share within the group and later in the class.

Students experimented with synchronous and asynchronous interactions on the Web, took part in the face to face classes, used Skype and other social media during the lessons and continuo their research during the evening and night and sometimes weekend. Website created for the purpose of the course provided information about objectives, methodology, content and bibliography [Short, 2012, 55-58]. The most important is that the content does not come only from the teacher, but students are knowledge builders and responsible of the content.

4. Methodology

For the purpose of examining the impact of the application Pbworks on collaborative writing among 42 participants of classes towards "Web Communication Management" and "Information System in Sport and Tourism" a survey entitled "Application Pbworks in education at Higher Education" was conducted. It included both quantitative and qualitative study. The survey was conducted from 20.04.2015 to 15.05.2015 during the online collaborative Learning workshops at the Faculty of Management at Academy of Physical Educations in Katowice – Poland. Among the research probe there were 22 females and 20 males. The average age of respondents was 23.9 years \pm 1.8.

To carry out the online survey a Google form was used for creating the online questionnaire and then by providing the hyperlinks to students. The results get through Google sheets were moved to the StatSoft Statistica 10, Inc package. The questionnaire had closed and multiple choice questions with a hierarchy assignation. The material was analysed using a qualitative statistics [Gibbons, Chakraborti, 2011, pp. 977-979]. To verify the hypothesis that the two qualitative characteristics of the population are independent the χ^2 test was used, comparing the incidence observed with the expected frequencies.

$$\chi^2 = \sum_{i=1}^n \frac{(O_i - E_i)^2}{E_i}$$

where:

O_i = the number of observations of type i ,

E_i = the expected number of observations of type i .

To determine the relationship between characteristics Kendall's τ factor were used, giving the assessment of the similarity triaged data set.

$$\tau = \frac{(\text{number of concordant pairs}) - (\text{number of discordant pairs})}{\frac{1}{2}n(n-1)}$$

n – sample size

and Spearman's rank correlation coefficient

$$\rho = 1 - \frac{6 \sum d_i^2}{n(n^2 - 1)}$$

where:

n – sample of size,

d_i – difference between ranks.

5. Analysis

Table 1 shows the detailed results of the attitude of students to the various statements related to the work in groups. Students agree that the use of collaboration tools is both easy and effective. 86.4% of respondents agree more or less with that statement. A larger percentage of respondents emphasis the simplicity of using online tool (34.1%) than about its effectiveness (25.0%).

Table 1. Student's perception of collaborative writing tools

Specification	Response							
	Strongly agree (SA)	Agree (A)	Neither agree nor disagree (NA)	Disagree (D)	Strongly disagree (SD)	Don't know (DN)	Sub-total (SA+A)	Sub-total (D+SD)
1	2	3	4	5	6	7	8	9
1. It was easy to use the tool in the group work	34.1%	52.3%	6.8%	4.5%	2.3%	0.0%	86.4%	6.8%
2. It was effective to use the tool in the group work	25.0%	61.4%	11.4%	0.0%	0.0%	2.3%	86.4%	0.0%
3. The tool was easier to use than traditional tools such as MS Word	16.3%	32.6%	30.2%	9.3%	4.7%	7.0%	48.8%	14.0%

Table 1 cont.

1	2	3	4	5	6	7	8	9
4. I liked to comment and edit others contributions to the group work	13.6%	43.2%	25.0%	9.1%	4.5%	4.5%	56.8%	13.6%
5. I liked that other students comment and edit my own work in the group	14.0%	44.2%	20.9%	9.3%	2.3%	9.3%	58.1%	11.6%
6. The quality of collaboration in the group increased with the use of the tool	31.0%	47.6%	14.3%	4.8%	2.4%	0.0%	78.6%	7.1%
7. The tool motivated me to collaborate with the students in the group	22.7%	50.0%	22.7%	2.3%	0.0%	2.3%	72.7%	2.3%
8. It was instructive to edit and comment others contributions to the group work	18.6%	44.2%	20.9%	4.7%	2.3%	9.3%	62.8%	7.0%
9. The tool did work as expected	37.2%	44.2%	11.6%	4.7%	2.3%	0.0%	81.4%	7.0%

Analysing the responses of students about the platform used for online collaborative writing, we should pointed out that the highest percentage of answers fell into: “The tool did work as expected” (37.2%), which in conjunction with the answers “agree” raised 81.4%. It is a very good result that gives the basis to conclude that online collaboration tools fulfil the hopes placed in them and that the methodology is already fairly well worked out. This is also confirmed by the responses to the question: “It was effective to use the tool in the group work”. None of the respondents expressed here his lower or greater disapproval.

Collaboration tools are also conducive to substantive criticism. Students in the group like to comment on entries of other participating in the project (56.8%), but what may be surprising, is the affirmation that there was not a problem for them to give an opinion in their own work (58.1%). Another positive aspect of the collaboration is that 72.7% of students in greater or less extent, agree with the statement: “The tool motivated me to collaborate with classmates in the group”, out of which 22.7% agree with this opinion in to a large extent. This fact means that the tool itself ceases to be merely a tool, but also begins to function as incentive, which is very important in the education process. Such an observation, however, wonder if it drops to 78.6% of the respondents indicated that they agree with the opinion: “The quality of collaboration in the group increased with the use of the tool”. This means that the people collaborating in the project could be positively motivated to work even better.

Table 2 presents the students opinion about the use of Pbworks as a tool for online collaborative writing.

Table 2. Students' perception of PBworks

Specification	Response							
	Strongly agree (SA)	Agree (A)	Neither agree nor disagree (NA)	Disagree (D)	Strongly disagree (SD)	Don't know (DN)	Sub-total (SA+A)	Sub-total (D+SD)
1. I liked to see my peers interact with the content I had posted on Pbworks	15.9%	45.5%	27.3%	4.5%	2.3%	4.5%	61.4%	6.8%
2. I felt comfortable to see other students edit the content I had posted	20.9%	41.9%	23.3%	7.0%	2.3%	4.7%	62.8%	9.3%
3. My group was able to come to a consensus by using Pbworks	27.9%	41.9%	20.9%	2.3%	0.0%	7.0%	69.8%	2.3%
4. I learned to exchange information with other students via Pbworks	31.8%	52.3%	11.4%	2.3%	2.3%	0.0%	84.1%	4.5%
5. The feedback and editing from peers were useful in improving my writing skill	23.3%	51.2%	18.6%	2.3%	0.0%	4.7%	74.4%	2.3%
6. Pbworks helped me share ideas with the other students	27.9%	51.2%	18.6%	2.3%	0.0%	0.0%	79.1%	2.3%
7. The use of Pbworks promoted knowledge information	34.1%	51.2%	9.8%	2.4%	0.0%	2.4%	85.4%	2.4%
8. The use of Pbworks increased interaction with other students	25.0%	50.0%	20.0%	2.5%	0.0%	2.5%	75.0%	2.5%
9. The use of Pbworks increased my motivation to study this course	16.3%	46.5%	27.9%	7.0%	2.3%	0.0%	62.8%	9.3%
10. The use of Pbworks promoted collaborative writing environment	25.6%	53.5%	11.6%	4.7%	2.3%	2.3%	79.1%	7.0%

Positive reviews can be found also in the discussion about the use of a specific online collaboration tools like Pbworks. The research shows that students agree with the opinion that the use of Pbworks encourages to raising awareness (34.1% strongly agrees with this thesis, 51.2% agree). Further as to the degree of consent were responses to the thesis: "I learned to exchange information with other students via Pbworks". Here, 84.1% of respondents agreed in a greater or less extent. This thesis also combines with another statement: "Pbworks helped me share ideas with other students", where 79.1% expressed their approval.

A similar distribution of responses is not surprising because Pbworks was created precisely for such purposes as exchange of information, cooperation and knowledge sharing. Just like in the Table 1, we find positive aspects for using this collaborative tool during the lessons. A positive aspect is that students after using this tool are open minded and easily accept modifications made by others on their research work. "I liked to see my peers interact with the content I had posted on Pbworks" positive opinion gives 61.4% of respondents, and to the statement "I felt comfortable to see other students edit the content I had posted" 62.8%. Collaboration tools can be a good platform for a consensus. 69.8% of respondents agreed that thanks the Pbworks, the group was able to find a common solution.

Working in groups during and after the lessons develop their own skills. 74.4% agreed with the statement: “The feedback from peers and editing were useful in improving my writing skills”. Pbworks in the opinion of most students can increase the interaction between colleagues (75% agreed with the thesis), which is important because, in the opinion of many researchers, Internet leads to isolation and alienation in young people. Just like in the earlier question regarding collaboration tools in general, Pbworks as one of these tools, motivate most of the students (62.8%) do a better job. The vast majority of respondents (79.1%) also confirms that “The use of Pbworks promoted collaborative writing environment”.

Table 3 presents the experience students had in the use of Information Communication Technology (ICT) in the classroom. The results are interesting as most of them use Facebook, Wiki, e-mails, Webpages, Cloud computing and Skype.

Table 3. Use of online tools before the academic year 2014/2015 (summer period)

Specification	Response		
	Never	Sometimes	Frequently
Discussion board	57.1%	35.7%	7.1%
Blog/journal	66.7%	31.0%	2.4%
WIKI	26.2%	31.0%	42.9%
E-mails	14.6%	31.7%	53.7%
Webpages	19.0%	23.8%	57.1%
Facebook	14.3%	19.0%	66.7%
Google Drive, Dropbox, etc.	21.4%	50.0%	28.6%
Skype	63.4%	31.7%	4.9%

In class and beyond it, to perform a group work can be used different software, freeware, shareware or just a webpage. The most common online tools used by our students seems to be Facebook (66%). This social media tool, in fact, allows for broad interaction between team members. Posting photos, videos, file-sharing, joint games are some of its features. Next in popularity is the use of websites (57.1%) and e-mail (53.7%).

Among the tools used during lectures (in the classroom) by university classes we can find the wiki (42.9%). On the other hand, less-used opportunities during the course include online pools such as a blog/journals. 66.7% of students considered that does not use this tool at all. Next in order is the Skype – 63.4%, which is not surprising as students uses Internet for searching content and mass communication. The same possibilities offered by Skype we can find in Facebook and this is the reason why this tool is lees used by our students. In our opinion, the same reason can be used when talking about “discussion boards”. 57.1% do not use Discussion boards at all. Google Drive or Dropbox acting as a virtual

drive is used by half of the respondents. Its use is from time to time. However, students increasingly use this tool to share files, have the necessary data in one place and always “at hand” but also as a backup critical files.

Figure 2. Wiki tool use during group work outside school activities

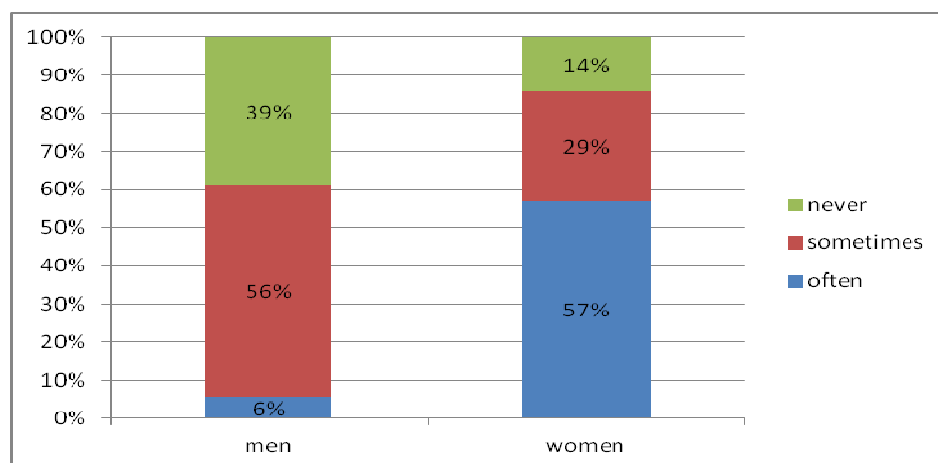


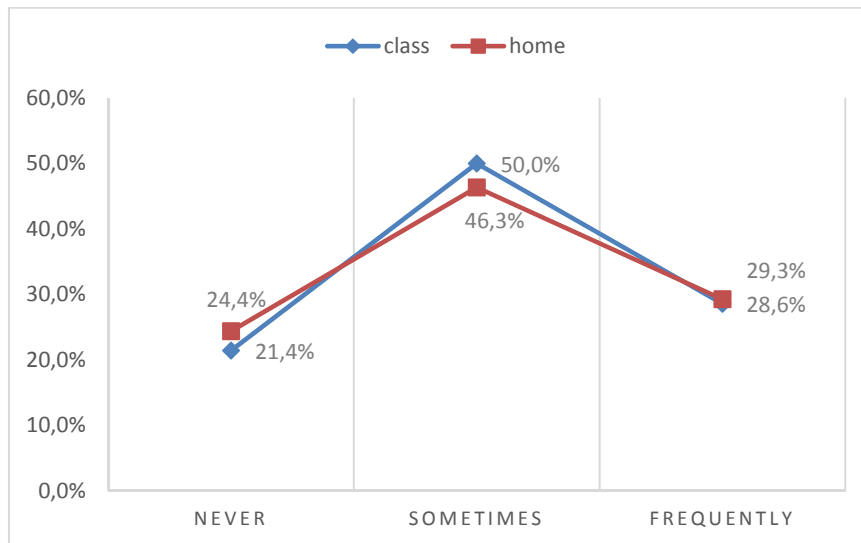
Table 4 refers to the use experience of online tools to prepare collaborative work outside the University Campus.

Table 4. Online collaborative writing experience

Specification	Response		
	Never	Sometimes	Frequently
Discussion board	43.9%	48.8%	7.3%
Blog/journal	73.2%	22.0%	4.9%
Wiki	25.6%	41.0%	33.3%
E-mails	5.0%	17.5%	77.5%
Webpages	12.5%	17.5%	70.0%
Facebook	12.8%	12.8%	74.4%
Google drive, Dropbox, etc.	24.4%	46.3%	29.3%
Skype	51.2%	39.0%	9.8%

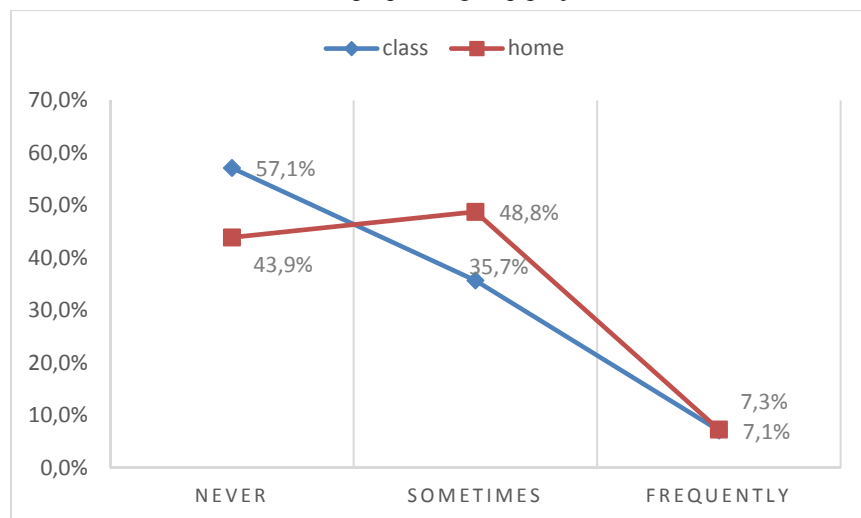
The use of some online tools to interact with classmates outside of the University Campus increases in certain options. E-mail is the most widely used tool (77,5% uses it often), in second place we can find Facebook (74.4%). From 4.9% to 9.8% increase the number of students using Skype of the classroom.

Figure 3. Use of “Cloud Computing” to prepare a group project in class and at home



Important to underline is that the use of determined tools to prepare a group work in the university is also used after at home. We find a very high correlation statistically evident even in the use of the “cloud computing”, for which Kendall’s tau b is, 75 ($p = 78$; $p = 0,00000$); for Facebook, 70; and for websites, 68.

Figure 4. Discussion boards’ use to prepare a group project in class and at home



The lowest correlation between the use of these tools in group work during university class and home occurs in the use of discussion board (tau b = 25, $p = 26$; $p = 0.107$).

Table 5. Online collaborative writing tools experience

Specification	Response		
	Yes	A little	No
Do you think writing on Pbworks online will help you with your academic writing process?	56.1%	36.6%	7.3%
Do you feel your group is working well online?	58.5%	36.6%	4.9%

A high number of respondents agree with the thesis that the use of Pbworks develops academic writing skills. 56.1% agree with this statement and 36.6% said that agree with this in a certain extent. Likewise, most of the students confirm that the group works function smoothly well in Internet. Only 4.9% disagree with this opinion.

Table 6. Positive aspects for using PBworks

Specification	Percentage of	
	answers	cases
Developing new skills	21.1%	83.3%
Access to others' work	16.3%	64.3%
Dynamic and easy learning	12.7%	50.0%
Writing content on the computer	12.7%	50.0%
Enough time to complete tasks	12.1%	47.6%
Interaction (with classmates)	10.8%	42.9%
Learning others' opinions about our task	9.0%	35.7%
Developing tasks in more detail	5.4%	21.4%

Based on research done by Kuteeva [2011] students have a choice of 4 from eight different benefits associated with the use of Pbworks. And so, 21% of all responses affirm that new skills were developed. For students online collaborative writing is a perfect tool for improving IT competences and develop new IT skill. Access to others' work (16.3%), Dynamic and easy learning and Writing content on the computer, that received 12.7% of the responses were the less chosen by students.

Looking at these figures from a different perspective, we can specify that 83.3% of people marked among the four most important benefits when using the Pbworks: "Developing new skills". "Access to others' work" 64.3% , "Dynamic and easy learning" and "Writing content on the computer" 50%.

Table 7. The option selected as the most important

Specification	Percentage
Developing new skills	41.5%
Access to others' work	19.5%
Enough time to complete tasks	12.2%
Writing content on the computer	12.2%
Dynamic and easy learning	9.8%
Interaction (with classmates)	2.4%
Learning others' opinions about our task	2.4%

When asked what specific advantage is the most important, almost half of the respondents – 41.5% chose “developing new skills”. For 19.5% of respondents one important aspect to take into account is the possibility to “access to others’ work”. In comparison with the previous table there was a slight change of benefits. 12.2% of researched people recognise that for them the most important benefit is “Enough time to complete tasks” and “Writing content on the computer”. On the other hand, the least popular benefits are “Interaction” and “Learning others’ opinions about our task”, which are only 2.4% of respondents.

Conclusions

The use of Pbworks to enhance students’ experiences was evaluated through student questionnaires. The results indicate that students had varying degrees of success in engaging with the wiki, and that some students were more comfortable than others with the validity of Pbworks platform for critical writing tasks. A recommendation emerging from this study is that wider use of online writing components within other courses could be beneficial.

Noticeable is the fact that there is no difference between men and women regarding the use of tools such as Facebook, Skype, e-mail, etc., in academic exercises. This could be because during the lessons and when choosing the team for the online work they are free to choose the classmates and they do not make differences between male and female, but the teams are formed generally taking into account their sympathy and objectives.

There are some differences when using IT tools for preparing the lessons at home between male and female. It turns out that, statistically, women more often than men use the wiki. $\chi^2 = 11.7$ at $p = 0.028$; a correlation R Spearman ($r_s = .51$; $p = 0.0105$). The same situation also occurs when using e-mail ($\chi^2 = 11.3$; $p = 0.003$; $r_s = .47$; $p = 0.022$) and using websites ($\chi^2 = 9.6$; $p = 0.007$; $r_s = .48$; $p = 0.002$). On the other hand tools such as discussion forums, blogs, Facebook, Cloud Computing or Skype there are not differences between these two groups. These differences are most notably in the use of wiki, where often this tool uses 57% of women and only 6% of men.

The study shows that Pbworks as online collaborative writing tool effectively fulfils its role in collaborative learning environments. As it results from the study, respondents viewed the Internet mainly through its communication function, which is of great importance in the case of collaborative writing, and seems to interact well with it. Moreover, its practical benefits have also been often highlighted by the respondents, as well as saving time, possibility to interact and opportunity to continue their work at home.

Generally speaking, the respondents have a high level of online social media skills, which allowed them to carry out the task of using the Internet and computer tools without any difficulties. Communication via the Internet is not a problem for them, they can operate a computer using the tools to write.

Some answers to open questions suggest that the task of creating a website did not come to everybody with the same ease. But most of the of respondents rated Pbworks as an easy and important tool for promoting online collaborative writing activities.

Respondents listed a lot of positive aspects of learning through collaboration, this “reciprocal learning” and learning the course content through the use of Pbworks in class and at home. Comments on the interesting, attractive form of learning, makes it easier to acquire knowledge, and the suggested form of learning has stimulated the creativity of students are also very important here. The latter observation corresponds with the current trend in teaching, the essence of which is the transition from teacher-oriented system to a student-oriented system, the transition from teaching to the learning system.

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Part V
Social media in higher education

Social media usage in higher education practice

Agnieszka Marie & Marta Grybs

Introduction

The new generation of students is characterised by ad-hoc communication, multi-tasking, and collaborative work interspersed with collaborative play. Their “life world” is social, mobile, open, and defined by ubiquitous access to and use of information. In this environment every user can both appear as a content generator (posts and comments) and aggregator (searches, activity feeds, and tags) [Mandviwalla et al., 2013, p. 53]. According to Ulbrich, Jahnke & Mårtensson [2011], members of the Net Generation use the web differently, they network differently, and they learn differently. When they start at university, traditional values on how to develop knowledge collide with their values. Many of the teaching techniques that have worked for decades do not work anymore because new students learn differently too. The Net Generation is used to networking; its members work collaboratively, they execute several tasks simultaneously, and they use the web to acquire knowledge [Ulbrich, Jahnke & Mårtensson, 2011 after Selwyn, 2012, p. 2].

The aim of this article is to characterise social media in context of higher education, which will contribute to better understanding of social media phenomena and constitutes an introduction to further research¹.

1. Social media concept and typology

Throughout recent years, there could be observed a rapid increase of a new set of information technologies which are commonly known as social media. Main role of social media is to support interpersonal communication, enhancement of cooperation and creation of relationships through Internet-based platforms. Within the most commonly indicated social media tools, there can be indicated sites such as Facebook, LinkedIn and Twitter, each of which are used by hundreds of millions of people. The amount of social media sites is growing as well as

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their popularity [Kane et.al., 2014]. Business Insider Report from December 2014 reports, that 2.7 bn people so nearly 40% of the world's population regularly use social media. These numbers can be treated as proof of social media enormous strength and potential. Higher education institutions noticed this trend towards social media popularity and as a result teachers, students and graduates routinely use social media for example to share news about scientific achievements, etc. Sites such as Facebook, Twitter, YouTube, Instagram and many others make it an easy way to disseminate information and establish relationships. However, Facebook remains the dominant social network by a huge margin as penetration reaches as high as 84% for web users between the ages of 18 and 29 [Guimaraes, 2014].

Social media are the platforms that enable the interactive web by engaging users to participate in, comment on and create content as means of communicating with their social graph, other users and the public. Social media has the following characteristics:

- it encompasses wide variety of content formats including text, video, photographs, audio, PDF and PowerPoint,
- it allows interactions to cross one or more platforms through social, sharing, email and feeds,
- facilitates enhanced speed of information dissemination,
- provides for one-to-one, one-to-many and many-to-many communications,
- enables communication to take place in real time or asynchronously over time,
- is device indifferent – it can take place via a computer (including laptops and netbooks), tablets (including iPads, iTouch, etc.) and mobile phones (particularly smartphones),
- extends engagement by creating real-time online events, extending online interactions offline, or augmenting live events online [Cohen, 2011].

The social media can be classified into 6 categories: social networks, bookmarking sites, social news, media sharing, microblogging and Blog Comments and Forums.

Social networks are the services that allow users to connect with other people of similar interests and background. Usually they are based on a profile, various ways to interact with other users, ability to setup groups, etc. The most popular are Facebook and LinkedIn [Grah, s.a.].

Bookmarking Sites on another hand are services that allow users to save and organize links to any number of online resources and websites. A great feature of these services is the ability for the user to “tag” links, which makes them easier to search, and invariably, share with their followers. The most popular platforms of this type are Delicious and StumbleUpon [Seopressor, s.a.; Grah, s.a.].

Next category is Social News websites, which are the communities that encourage their users to submit news stories, articles and media (images/videos) and share them with other users or the general public. This allows people to post various news items or links to outside articles and then enables the users to "vote" on the items. The voting is the core social aspect as the items that get the most votes are displayed the most prominently. The most popular are Digg and Reddit [BMJ Blogs, 2010; Seopressor, s.a.].

Media sharing social media is a website that enables users to store and share their multimedia files (photos, videos, music) with others. Such sites are often freemium based, providing a modest amount of free storage and paid subscriptions for greater storage. Most of these sites also offer social features, like the ability to create profiles and the option of commenting on the uploaded images. YouTube is the most well-known media sharing site [PC Encyclopedia, s.a.; Seopressor, s.a.].

The microblogging category involves the services that allow the users to submit short written entries, which can include links to product and service sites, as well as links to other social media sites. These are then posted on the "walls" of everyone who has subscribed to that user's account. The most commonly used microblogging website is Twitter [Seopressor, s.a.].

The last category to be mentioned are Blog Comments and Forums – online forums allow members to hold conversations by posting messages. Blog comments are similar except they are attached to blogs and usually the discussion centers around the topic of the blog post [Grah, s.a.].

2. Social media application in education

According to the literature and several studies, faculty does not make an extensive use of social media in order to communicate with students or to make students assignments [Atwong, 2015] and there can be noticed a resistance towards usage of social media in teaching practice. Based on studies, it can be said that the usage of social media technology for formal educational purposes is a reason of controversy [Piotrowski, 2015]. Despite the fact that majority of marketing professors can be indicated as social media users on a personal basis, only minority of them engage social media also in their classes [Tuten, Marks, 2012]. As modern students are representatives of so called Millennials or in other words Generation Y, Net Generation, engagement of technology-driven communication in case of communication with them is proved to improve the learning outcomes of courses [Faulds, Mangold, 2014]. Social media, besides being an effective

medium of communication, can also develop students' skills. According to Granitz and Koernig [2011] there can be engaged a variety of Web 2.0 tools and different social media channels in order to increase students' knowledge and skills appreciated by employers on job market. Due to the fact, that one of the biggest challenges of marketing educators is to integrate theory with practical approach, Web 2.0 seems to fit the gap. Teaching tools which are relevant to students' needs persuade them to become more engaged and have positive influence on their learning outcomes [Peterson, Dover, 2014]. As a result it can be concluded that Web 2.0 technologies have the potential of enhancing student engagement, academic performance, and faculty-student interaction, as well as foster administrative communication with students [Voom, Kommers, 2013].

Despite being cautious, universities are aware of the fact that they have to gradually rethink how their organisations and infrastructures can be more agile and flexible, as only then University will be able to support and promote entrepreneurial thinking. One of the solutions for today Universities is social media engagement in the process of teaching. There can be observed several trends which characterise modern higher education in terms of new technologies. According to NMC Horizon Report on Higher Education [2015] one of the most important trends for higher education is blending formal and informal learning into formal education.

It is believed that social media engagement in formal learning brings the ability to self-learning based on curiosity (type of learning long used in museum, science centres or personal learning networks). It enables student to follow their own learning paths or even stimulate new ones. Such approach demand new policies worked out in order for higher education institutions to effectively engage informal teaching methods like social media to teaching offer. Much work has been done globally to define aspects of informal learning. At a global leadership level, OECD has underlined that learning is a constant process and therefore informal learning can be critical for improving educational opportunities. Many projects were conducted on European level in order to address the challenge of how students' learning outcomes that were generated within virtual space can be integrated into study programs. What is more, within Lisbon Treaty signed by The European Union skills and competences gained informally were recognised to promote student mobility throughout EU Member States. It shall be underlined that although there can be found an extensive literature on social media in higher education, there is lack of literature about policies on how to engage social media in higher education practice. Such literature exists in connection to business industry, while higher education industry is almost not covered [Pomer-

antz, Hank, Sugimoto, 2015, pp. 1-4). As a result, despite growing number of governmental and non-governmental actions undertaken, informal teaching with social media tools still generates a lot of anxiety among teachers. When analysing how higher education institutions engage social media in their practice it can be said, that very often they treat it as marketing communication tool only.

According to research conducted among Polish Universities [Buchnowska, 2013, pp. 43-47], majority of them have social media profile on Facebook. The aim of the profile is to communicate with students, graduates and candidates mainly. As main purpose of social media engagement Universities indicate management of institution image among stakeholders. Throughout last years in Poland social media became very commonly used by Universities as a tool which enables to communicate, collaborate, share knowledge and build relationships with candidates, currently enrolled students, alumnus as well as other Universities, companies around the globe. Social media opportunities were noticed by scientists who network, exchange knowledge via various social media. Scientists noticed that using social media may lead to increase of citations rate, improvement of reputation among the scientific environment so they use it as one of the tools to develop the career and improve the image as scientist on the global scientific area [Stachowiak, 2013, pp. 50-56]. However, social media profiles and opportunities are not used in order to improve teaching methods nor the communication in the classroom [Chwiałkowska 2014, pp. 81-84].

3. Social media – opportunities and treats in educational context

The social media as communication tool creates various opportunities and challenges. One of the most important challenge connected with social media in general is the privacy issue. Although a lot of the information individuals supply on social-networking sites is elective, users are progressively more comfortable with displaying a great deal of personal information online [Zaidieh, 2012, pp. 19]. Using the social media in education can results in an unwanted exchange of information between students and teachers. Even if they should know the information published on their social profiles, they may not be fully aware of what is available to the wider audience, e.g. due to misunderstanding of privacy settings.

Social media has also an impact on users' health. Studies show that it is highly addictive, people log on social media portals at least once a day and many of them use those sites for distractions and boredom relief. Social media makes its users compare their lives with others and in this way contributes to dissatisfaction and frustration, it should be underlined that the ideal life presented on social

media profile does not necessarily have to be true. Moreover, social media results in FOMO – fear of missing out, which is a phenomenon that occurs when people feel pressure to be doing what everyone else is doing, attend every event, and share every life experience. It can evoke anxiety and cause social media users to question why everyone is “having fun without them” [Degreed, 2014; Medical News Today, 2014].

There is also a threat, that the use of social media may decrease the users’ ability to communicate. Learners face some difficulty through social networking in expressing their views and ideas in writing, as many learners prefer to express their ideas orally which is approach they have used for many years through their study. Face to face allows individuals to perceive physical clues like tone, inflection, body language, in an online environment, these are lacking [Zaidieh, 2012, p. 20]. Moreover, according to the research of E. Musiał, for example among the Japanese students from Generation Y (persons born after 1980), the online communication is easier than talking face to face, as it does not require any particular social skills, like empathy or providing support, it releases from timidity and fear of rejection [Laskowska, 2012, p. 7].

The last challenge facing by educators who would like to communicate with their students via social media is the Internet accessibility. The majority of students probably have an access to the Internet, eventually they can use free access at their schools, however, it can be assumed that there still remains a huge number of students who would be disadvantaged and somehow discriminated due to a lack of social media access.

Social media creates also multiple opportunities for enhancing the quality of education. First of all the educators who own profiles on social media websites are more credible and trustful. Social media make teachers closer to their students and in this way increase the respect, positive attitudes to the course, as well as understanding and cooperation. Moreover educators often use social media to recommend some interesting and valuable content to their students, which increases the willingness of students to study [Miastodzieci.pl, s.a.].

The use of social media in education develops the 21st century skills of students, needed for a successful career after school. This also creates a positive attitude towards the use of technology not only in education but in students’ life as a whole. This can also increase the creativity, as students can share and exchange school assignments and projects, and develops in the same way students’ critical thinking, problem solving, collaboration and global participation [Educational Technology and Mobile Learning, 2012].

Social media makes education more flexible. Flexible learning expands choice on what, when, where and how people learn. It supports different styles of learning, including e-learning. Flexibility means anticipating, and responding to the needs and expectations of students [Zaidieh, 2012, p. 20]. People use social media in various circumstances and spend on it a lot of time. Using social media in education on one hand enables the educators to reach their students anytime and anywhere, and on another hand allows students to study whenever they have a free moment and of course the willingness to learn something new.

Conclusions

Higher education institutions may benefit from the penetration of social media for several reasons: young people are open to novelties; the traditional model of one-way communication becomes less relevant; social media gives possibility to spread the message from many to many. Universities' target audiences have their opinion and have possibilities to express it through a variety of social media channels. Social media helps then to reach community and in more relevant way, to pursue direct communication [Zailskaite-Jakste, Kuvykaite, 2012, p. 175].

Internet can be treated as very dynamic information environment for human being. Throughout past years it could be observed that Internet and its tools enhanced the communication of higher education institutions. On the other hand it still stands as a challenge to be used effectively. Despite several years of development, Internet and its communication tools cause many fears and misunderstandings within the higher education environment in some areas [Cisek, Sapa, 2006]. Some optimal solutions are still searched for in order to increase the efficiency of communication within University itself as well as between University and its stakeholders. Social media is more and more fondly engaged in higher education. Nevertheless, social media engagement is usually understood mainly from advertising point of view. There is a gap in the analysis of social media engagement in scientific communication or collaborative platform.

It shall be underlined that higher education has been open to social media in some areas of its activities. It can be said that higher education institutions value the ability to build connections and truly engage stakeholders in the university's community. Creating lasting relationships with stakeholders in real-time, here and now, allows building active engagement in the future. Social media can ensure improved customer engagement throughout the life cycle of the student.

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Analysis of higher education institutions' brand presence in social media – case study of the University of Economics in Katowice

Marek Kiczka & Edyta Lachowicz-Santos

Introduction

Until the end of 2014 there have been almost 3.08 bn Internet users in the world, whereas the world population itself amounted to over 7.26 bn. The share of Internet users therefore has come close to 42%. From 2000 till today, the number of Internet users increased by 753% and continues to grow faster than the world population [Miniwatts Marketing Group, 2015]. According to the estimates of the Worldometers, the world population is projected to reach 8 bn by 2024, while the number of Internet users – given the current dynamics – will exceed 5 bn [2015]. In turn, Internet users have generated and will continue to generate even more data, subject of exchange and processing. It has to do with the rapidly increasing network availability and decreasing cost of data storage. Confirmation of this can be found in the publication of the National Intelligence Council, “Global Trends 2030: Alternative worlds”, according to which “information technology is entering the big data era. Process power and data storage are becoming almost free; networks and the cloud will provide global access and pervasive services” [2012]. Big share of this data exchange pertains to the social media due to the fact that they are used globally by people of all ages, companies and institutions. The popularity and massive use of social media is not a transient phenomenon, it is a reality, and fact [Smith, Wollan, 2011]. Therefore for higher education institutions, (HEIs) which nowadays provide their services on a more massive and global scale than ever before the question is not whether to be present in social media but where and how [Barber, Donnelly and Rizvi, 2013].

Since the main focus of this article revolves around the use of social media by HEIs the authors have analysed how the top universities in Africa, Asia, Europe, North America, Oceania and South America communicate with their target audiences. Moreover, the popularity of social networking sites in Poland with special focus on the University of Economics in Katowice (UE Katowice) has been examined. The aim of the quantitative analysis conducted was to identify new opportunities for communication and verify the legitimacy of social media platforms used so far by UE Katowice.

1. Defining social media

The term “new media” broadly refers to computer and communication technologies [Lin et al., 2013, p. 160]. New media are characterised by such notions as: interactivity, digitality, hypertextuality, virtuality, and dispersal [Lister et al., 2003]. Social media, being a subset of new media, include all internet services, pages and applications, usually free of charge, which are designed for communication within certain communities [Kiczka, Lachowicz-Santos, 2013]. Within those communities the users adopt social media to fulfill the four main social usages: publishing, sharing, discussing and networking [Reed, 2011]. Those trends have been very well illustrated in the Social Media Landscape (see Figure 1), the constantly updated infographic which portrays how complex, abundant and diverse the social media environment is.

Figure 1. Social Media Landscape 2015



FredCavazza.net

Source: [Cavazza, 2015].

“At the center of this ecosystem there are media that allow users to fulfill each of the four main social usages, but they also stand as relay” [Cavazza, 2015]. For that reason the number of social media users continues to grow at a steady rate. As reported by The Radicati Group, in 2013 the number of open accounts on social networking sites in the world amounted to nearly 3.2 bn, in 2015 their number is forecast to reach more than 4 bn, and in 2017 already at nearly 4.9 bn [2013]. One of the main reasons for these trends is that social media provide people with the possibility to fulfill their innate need to feel a sense of belonging and acceptance among their social groups, as pointed out in the Maslow’s hierarchy of needs [Seitel, 2003].

The modern generation, often known as Generation Y or Millennials, lives in the reality where it is hard to imagine life without new communications technologies, Internet, smartphones and mobile devices. For most Internet users, social networking sites are taken for granted and constitute part of their everyday reality and thus social media engages more users than any other media to date [Ahmed, 2012]. In just one second social media users send 9,686 tweets, upload 2,396 photos to Instagram, post 2,088 times on Tumblr and view 104,716 YouTube videos [Internet Live Stats, 2015]. No wonder that social networking sites have big share among the most popular websites in the world. In the first 10 most popular services 5 are social media platforms: Facebook (2nd), YouTube (3rd), Wikipedia (7th), QQ (8th), and Twitter (9th). Other social media services have also been quite highly ranked: LinkedIn (14th), Weibo (16th), Blogspot (20th), VKontakte – VK (21st), Instagram (27th), Pinterest (39th), Tumblr (40th), Wordpress (41st), Imgur (42nd) [Alexa, 2015b]. Furthermore, social media have naturally become a place where people of all ages meet, share their views and interact among themselves faster and on a much larger scale than ever before [Ayanso, Herath and Lertwachara, 2011]. While radio needed thirty eight years to reach 50 million viewers, television thirteen years, the Internet needed just four years. Social media have met this target in just two years [Beinhauer, 2004].

Social media services constitute public platforms where individuals have diverse opportunities to express their opinions on organisations, governments, businesses and institutions, etc. This way they embrace a very powerful tool to influence what they represent. On the other hand social media provide the companies and institutions with many channels to reach their consumers, engage individuals as well as whole groups, which results in stronger and deeper relations with them [Smith, Wollan, 2011].

With the above facts in mind it seems reasonable for HEIs to take advantage of social media as marketing tools. Just like for other institutional users social media pose a challenge but also wide range of opportunities. They become an effective tool allowing to reach the main target audiences: prospective and current students, staff and alumni at a relatively low or no additional cost.

2. Pros and cons of using social media by HEIs

Like most of the Internet tools social media have their advantages and disadvantages. Majority of the networking sites are very user friendly and such actions like opening an account is generally quite simple, but like everything that comes easily, it can be dangerous. It is therefore justified to first identify strengths, weaknesses, opportunities and threats of the social media before deciding to communicate through them. The results of a general SWOT analysis of the social media may be regarded as universal based on the assumption that each social media is characterised by the set of such common features, as the mentioned above: interactivity, digitality, hypertextuality, virtuality, and dispersal [Lister et al., 2003]. For the purpose of this paper a universal SWOT comparison of social media as communication tools for HEIs – taking into account their specificity – has been prepared. The results have been presented in Table 1.

Table 1. The use of social media by HEIs – universal SWOT comparison

Strengths	Weaknesses
<ul style="list-style-type: none"> – Free access (basic use) – Easy to administer/manage – Fast (real-time) – Searchable – Interactive – Massive (big amount of potential customers: candidates/students/employees/alumni/institutional partners/etc.) – Global – Accessible (via many types of devices) 	<ul style="list-style-type: none"> – Requires time commitment and engagement – Full or partial anonymity of the users – Limited or no control over content – Requires Internet access – Information overload (pop-ups), low quality content, ads
Opportunities	Threats
<ul style="list-style-type: none"> – Everyday presence and interaction of the main target groups of the HEIs (various age groups) – Direct contact with audience in the environment where they spend a lot of their free time – Reaching large groups of consumers in short time – Facilitated building and maintaining relations with consumers – Engaging consumer – Feedback that can help develop products or services (study offer) – Increasing university brand awareness – Humanises the brand and makes processes more personal – Penetration into a new geographical market quickly – Being present and easier to find 	<ul style="list-style-type: none"> – Security issues (malware, spam, fake links, etc.) – Trolling, anonymous haters, negative comments/videos often get viral – Need of fast reactions at any time of the day/night to social media crisis situations – Lack of skills in administrating social media presence (very dynamic ecosystem) – Outdated or lack of social media policy – Exposure of personally identifiable information – Lack of tools or resources to track and monitor social media campaign results

Although the use of social media obviously carries with it certain risks for HEIs, the opportunities they offer cannot (and do not) go unnoticed. As shown in a study carried out by the University of Massachusetts Dartmouth, in the recent year HEIs have strongly marked their presence in social media services. In the surveys conducted for several years in a row the researchers have been tracking the use of social and digital media by colleges and universities in the U.S. as part of their outreach and marketing. The results of the studies indicated that 100% of the HEIs in the U.S. use some form of social media [Hanover Research, 2014].

3. Brand presence and the use of social media by individuals and HEIs worldwide

Social networking sites are commonly used by organisations, companies and institutions (including universities), but before they entered the social media market, their consumers, i.e. individual users, had been present there before. The same has been true in the case of universities which have naturally begun to use social media once their prospective and current students as well as alumni had been present and active there. Therefore it seems justified to claim that the choice of social media platforms by HEIs should be based on the analysis of which media are used by their “consumers” [Lee, 2014]. The social media popularity rankings seem particularly useful to serve that purpose. In the HEIs reality, when the mobile device market among young people is constantly growing, it is noteworthy to take into account the rankings of the trendiest social networks people use both on the web and on mobile. In the ranking prepared by a trend expert E. Moreau the top ten networks include: Facebook, Twitter, Google+, YouTube, LinkedIn, Instagram, Pinterest, Tumblr, Vine, Snapchat [2015]. Similar, though not identical, results are presented in the “Top 15 Most Popular Social Networking Sites” ranking: Facebook, Twitter, LinkedIn, Pinterest, Google+, Tumblr, Instagram, VK, Flickr, Vine [eBizMBA, 2015].

The analysis below presents the list of social media used by the top universities in every region of the world, mainly Africa, Asia, Europe, North America, Oceania, and South America. Moreover, since the aim of the paper is to identify the needs and opportunities offered by social media presence for the UE Katowice, the juxtaposition contains Polish universities so as to present the right context. The choice of universities was based on the results of QS World University Rankings 2014/15, one of the top rankings of the universities in the world [QS, 2015]. For the purpose of the analysis the web sites of the universities have been searched for links to the official profiles of the HEIs in social media as well as the social media themselves. The results of the analysis can be found in Table 2.

Table 2. The use of social media by the best HEIs worldwide (by region)

	Higher Education Institutions	Social Media																				
		Facebook	Twitter	YouTube	LinkedIn	Instagram	Google+	Flickr	Weibo	Pinterest	Delicious	SoundCloud	Goldenline	Tumblr	VK	Digg	StumbleUpon	Xing	Snapchat	YouTube (YK)	Blog /wordpress	TOTAL
Africa	University of Cape Town	x	x	x	x																	4
	University of the Witwatersrand	x	x		x						x					x	x					6
	The American University in Cairo	x	x	x	x	x																5
	Stellenbosch University	x	x	x																		3
	University of Pretoria	x	x	x	x		x															5
Asia	National University of Singapore (NUS)	x	x	x	x	x																5
	The University of Hong Kong	x	x	x																		3
	The University of Tokyo	x	x	x																		3
	Seoul National University	x	x	x																		3
	Kyoto University	x	x																			2
Europe	University of Cambridge	x	x	x	x	x		x														6
	Imperial College London	x	x	x	x	x	x		x													7
	University of Oxford	x	x	x	x	x	x		x													7
	UCL (University College London)	x	x	x		x		x				x										6
	ETH Zurich - Swiss Federal Institute of Technology	x	x	x	x		x											x				6
North America	Massachusetts Institute of Technology (MIT)	x	x	x			x															4
	Harvard University	x	x	x	x	x																5
	Stanford University	x	x	x		x																4
	California Institute of Technology (Caltech)	x	x	x		x		x														5
	Princeton University	x	x	x	x	x	x		x						x					x		9
Oceania	The Australian National University	x	x	x	x	x						x								x		7
	The University of Melbourne	x	x	x	x	x	x															6
	The University of Sydney	x	x	x	x	x	x		x													7
	The University of Queensland	x	x	x	x	x		x														6
	The University of New South Wales (UNSW Australia)	x	x	x	x	x	x				x											7
South America	Universidade de São Paulo	x	x	x			x															4
	Pontificia Universidad Católica de Chile (UC)	x	x	x				x														4
	Universidad de Buenos Aires (UBA)	x	x	x																		3
	Universidade Estadual de Campinas (Unicamp)																					0
	Universidad de Chile	x	x	x	x	x	x				x	x										8
Poland	University of Warsaw	x		x																		2
	Jagiellonian University	x	x	x		x	x	x														6
	Warsaw University of Technology	x	x		x	x				x			x								x	7
	University of Lodz	x	x	x			x	x					x		x							7
	Nicolaus Copernicus University	x	x	x																		3
TOTAL	35	34	33	31	18	18	13	7	4	3	2	2	2	1	1	1	1	1	1	1	1	1

Given the above analysis, the best universities in the world use the following social media to communicate: Facebook (34 of 35), Twitter (33), YouTube (31). Slightly more than half of them use LinkedIn and Instagram (both 18 of 35). 37.1% use Google+, 20% Flickr, 11.4% Weibo, and less than 9% use Pinterest. It is worth noting that HEIs mostly use an average of five social networking ser-

vices. Only one of the universities included in the ranking – Universidade Estadual de Campinas (Unicamp) does not officially use any service, although the authors of this study identified unofficial profiles of the university in Facebook, LinkedIn and Google+.

The presence of the university brand in the social media ecosystem can be analysed in two ways. On the one hand there is the intentional presence, that is, when universities create an official social media profiles and administer them. On the other hand, we deal with the unintentional presence, that is, without official interference from the university staff. In addition, unintentional presence of the university brand in social media takes place whenever the university's name is mentioned in any type of content, e.g. comment, opinion, photo or video published both by individual and institutional users. The presence of the university in social media in the form of profiling – both intentional and unintentional – can be identified in the same way as identified in Table 2. Analysis and monitoring of the brand presence in such a dynamic environment without the use of special tools is very difficult, if not impossible. There are special Internet and social media monitoring tools provided on paid basis by various companies. In Poland, for example, there are: PressService, Institute of Media Monitoring (IMM), Brand24, NewsPoint or SentiOne.

Moreover, there are some free or premium tools that can be used for the analysis of brand presence on the Internet, such as HowSociable, a brand's impact on the social web measuring tool [HowSociable, 2015] or Social Mention – a social media search and analysis platform that aggregates user generated content into a single stream of information. Such monitoring activities allow to easily track and measure what people say about a given brand across the web's social media landscape in real-time [SocialMention, 2015].

4. UE Katowice – analysis of intentional and unintentional social media presence

While analysing the case of the UE Katowice's presence in social media it seems reasonable to refer to the popularity of individual social media services in the country where the university is located. According to the IRCenter report, in 2014 the most popular social media in Poland were Facebook, YouTube, Twitter, LinkedIn, Instagram and Blogger. Among them, the major platforms for interaction, sharing and discussions are provided by Facebook and Twitter. The distribution of all the posts published in social media amounted to 44.1% for the first, and 29.1% for the second one, respectively. The greatest rate of growth has been noted, in turn, by Instagram [IRCenter, 2015], which users in Poland are the most socialized (see Table 3).

Table 3. Social Media Matrix for Poland

	social media used at least once a month					
	Facebook	YouTube	Twitter	Instagram	Blogosphere	LinkedIn
% of Facebook users	-	88,3%	98,2%	98,5%	91,8%	94,0%
% of YouTube users	95,3%	-	99,5%	99,5%	98,1%	99,0%
% of Twitter users	31,8%	29,9%	-	70,7%	41,3%	62,3%
% of Instagram users	28,6%	26,8%	63,3%	-	38,9%	58,3%
% of Blogosphere users	56,0%	55,4%	77,8%	81,8%	-	78,4%
% of LinkedIn users	27,4%	26,8%	56,1%	58,6%	37,5%	-

Source: [IRCenter, 2015].

As pointed out, virtually every one of them actively uses Facebook and YouTube, 80% read blogs, 7 out of 10 tweet, and just over half use LinkedIn. Thus, it could be concluded that Instagram is the biggest platform that connects Internet users in social media.

As indicated in Table 2, the best universities in Poland use Facebook, Twitter and YouTube, followed by Instagram, Google+, Flickr and Goldenline, and finally LinkedIn, VK, Pinterest and blogs. As compared to the statistics of all the universities from various parts of the world analysed in Table 2 the popularity rate of the media in Poland does not differ significantly. In the top seven social media services, six turn out to be the same for all the analysed universities.

Moving on to the analysis of the UE in Katowice in social media, the study conducted for the purpose of this paper identified both intentional and unintentional presence. According to the information provided on the web site of the university, it has active official profiles on five sites (Facebook, Twitter, YouTube, LinkedIn and VK), which corresponds with the average number of social media used by the top universities, as presented in Table 2 [Uniwersytet Ekonomiczny w Katowicach, 2015]. Furthermore, the university placed links to blogs run by academics, students and alumni (mostly foreigners). It is worth pointing out that UE Katowice has an active profile on the Russian-speaking VK. This social media service constitutes Russian-speaking alternative to Facebook and thus is the most popular social networking site in countries where people commonly use the Russian language [Cosenza, 2015]. According to the Alexa ranking it occupies the top position among social media services in Russia, Ukraine, Belarus and Kazakhstan [Alexa, 2015a]. The rationale behind the intentional presence of UE Katowice in VK is their focus on the Eastern Europe as the source of potential international students. Strategy which is justified by the numbers: the largest group of foreign students in Poland is Ukrainians – 42% and Belarusians – 10%. The Russians and Kazakhs are 2% and 1%, respectively [Siwińska, Olczak and Więckowski, 2014].

The intentional presence of social media can be studied by the statistical tools provided by each social media platform. Based on the analysis of the generated data administrators of the official profiles may identify the most successful ways to interact with their target audience. For the purpose of this paper the official Facebook profile of UE Katowice has been examined (Table 4).

Table 4. Statistics of UE Katowice's official Facebook posts (1.05.2014-30.04.2015)

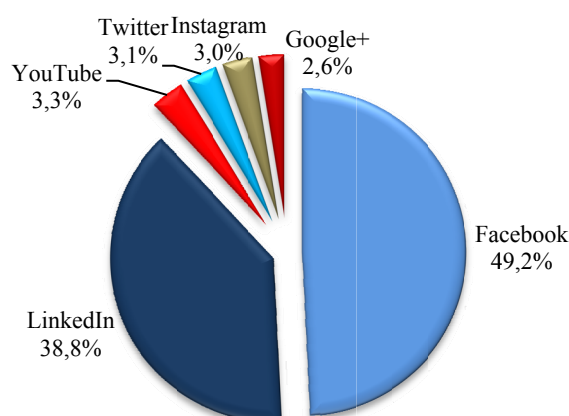
Type of post	Number of posts	Interaction (comments, likes, shares, others)	Average interaction per post
Link	162	2 145	13
Photo	311	7 519	24
Status	44	994	23
Video	3	244	81
TOTAL	520	10 902	

Source: Based on [Facebook Insights, 2015].

As the data collected indicates, out of the four types of Facebook posts the most engaging ones are those that include videos (81 average interaction per posts), followed photos (24) and status (23). Despite of the mentioned statistics the UE Katowice posted only three video posts in the studied period, which constitutes only 0,6% of all the published posts. It seems reasonable to increase the amount of this type of posts in order to maximise the engagement of UE Katowice's target groups.

In the further analysis of UE Katowice the unintentional presence in social media generated by users (posts, comments, opinions) have been studied with the use of Brand24 – Internet and social media monitoring tool. The analysis covered a period of 12 months (from 1.05.2014 to 30.04.2015). In this time there were about 1 597 mentions of UE Katowice in the analysed social media (Figure 2). Nearly half appeared on Facebook, and 38.8% on LinkedIn.

Figure 2. Percentage of mentions about UE Katowice in Social Media (1.05.2014-30.04.2015)



Source: Based on [Brand24, 2015].

When focusing on the unintentional mentions in Facebook it can be noted that they come from the profiles of student organisations, student services or less official profiles. The top five include:

- KU AZS UE Katowice (UE Katowice Sports Association);
- UE Katowice Memes (unofficial profile administered by students);
- AZS Akademicki Związek Sportowy (Academic Sports Association);
- ACK UE Katowice (UE Katowice Career Services);
- OSN UE Katowice (Organisation of Students with Disabilities at the UE Katowice) [Brand24, 2015].

The unintentional mentions in this case include comments, photos and even videos posted by students expressing their appreciation, criticism, ideas and opinions. Analysing unofficial posts and mentions can be the source of information for UE Katowice based on which, e.g. the student services and therefore level of satisfaction, could be improved.

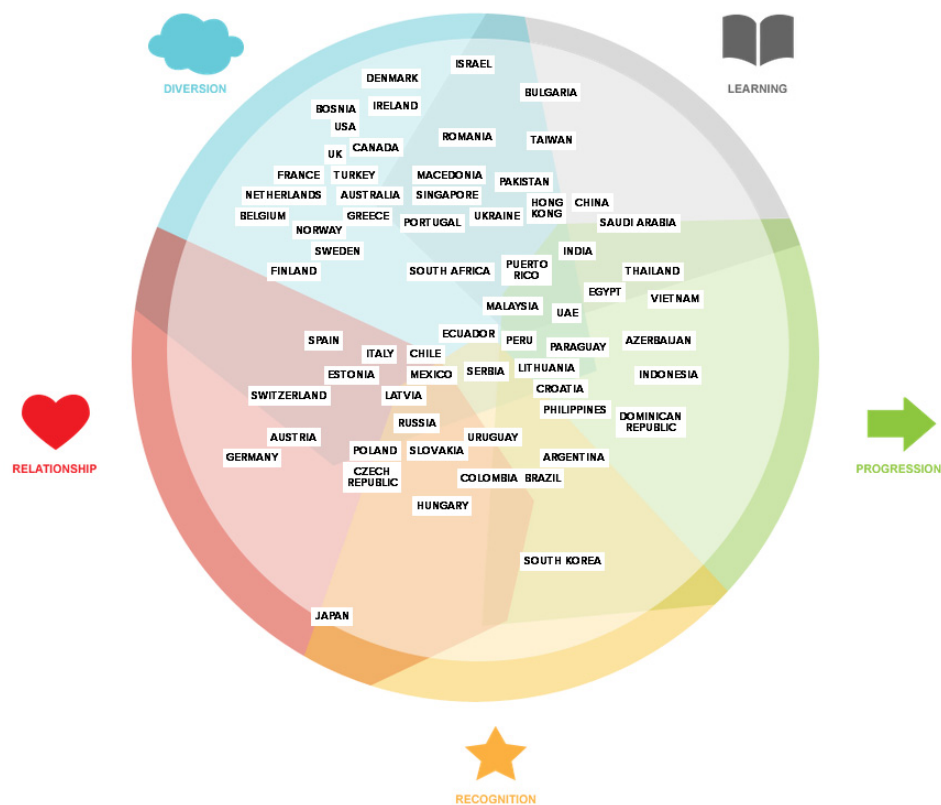
Drawing conclusions from the above case study, although the analysis presented here is not a qualitative but mainly quantitative one, it is worth noting that in some cases the presence in the studied services is not consequent or active. For example, there is no activity and no official profile of UE Katowice in LinkedIn in Polish (only the English one exists) and the users often refer in their profiles (CVs) to an unofficial profile using the previous name of UE Katowice – “Akademia Ekonomiczna im. Karola Adamieckiego w Katowicach”. This way, the University does not take full advantage of this social media platform which provides HEIs with dedicated profiles generating info on alumni, users, etc. Another fact worth mentioning is that although YouTube and Twitter are at the forefront of popularity both in Poland and in the world – and thus commonly used by the main audience of the university – only a very small percentage of the share of the UE Katowice’s mentions was generated by the users in these media. Therefore, it seems justified to recommend that UE Katowice re-evaluates the existing policies aimed at engaging their users (interacting with them) in order to identify areas that can be improved and activities that need to be implemented.

With all the data collected while analysing the best universities in the world (see Table 2) it can also be concluded that UE Katowice should seriously consider launching a profile and getting users engaged using Instagram which also ranks among the most popular services. It has been noted that although the university does not have a profile in Instagram, the site has come up with more than 3% of all mentions in the analyzed period from 1.05.2014 to 30.04.2015. In Poland Instagram is also a medium characterised by the highest dynamics. According to

the report IRCenter, it is a platform that connects the users of other social media services [2015]. Another argument in favour of using Instagram may be the Global map of social needs, shown in Figure 3.

Poland on this map is located on the border of two quadrants: “relationship” and “recognition”. “Countries in quadrant relationship are more likely to use social media to build and maintain relationships, e.g. to meet new people, to stay in touch with friends, to make contacts for work, to share knowledge or to feel like you belong”. In countries classified in quadrant recognition “people are more likely to use social media to show their personality and identity, e.g. to change opinions or to express themselves” [UM, 2015]. It is worth emphasising that Instagram is a service which enables realisation of all those needs in a natural way, thanks to its functionalities. Therefore using Instagram to communicate can facilitate building a large, engaged academic community based on mutual lasting relationships.

Figure 3. Global map of social needs



Source: [UM, 2015].

As in the case Instagram, it may be worth considering communication using Google+. UE Katowice does not have a profile there either and still the site has come up with 2.6% of all mentions of the university in the analysed 12-month period. Google is also quite often used by the universities in the world (Table 2), although it has been observed that the evaluation of the level of popularity of Google+ in general can be a bit more tricky as it is part of the Google domain traffic. For example, in a study on the most popular social media in Poland, conducted by IRCenter, this service was not at all taken into account [2015].

Conclusions

The aim of the above analysis was to identify the opportunities as well as needs to intensify communication with the use of certain social media platforms by UE Katowice. It has been indicated that the activities conducted so far need to be enhanced and reconsidered, and at the same time it is worth considering to open profiles in social media where UE Katowice has not been active so far. The study of literature on this matter clearly emphasised the importance of preparing a social media policy – whether it is an official document or a less formal short and long-term plan of the presence in social media [Lauby, 2009]. It is crucial for any institution, including HEI, to decide and answer some questions like which services fit best their target audience, what and how they want to communicate, how to measure the effectiveness, etc.

In such considerations, SWOT comparison where in addition to the opportunities and strengths, the potential threats and risks are identified constitutes an important element. It is crucial that the team administrating the social media profiles of HEIs has the knowledge and experience and the “feeling” of how it engages the users in order to successfully interact with them. It is not uncommon for HEIs to implement the elements of the “peer-to-peer” (P2P) communication models and engage students and alumni to run their official social media profiles [Lavrusik, 2009].

The literature emphasises in several places the fact that without at least a general idea/plan (or well prepared strategy) and a dedicated person/team it is better not to open an official profile than have it inactive and “silent”. Social media policy is also important when entering a new market, considering the fact that the most popular social media in the world is not always the most popular one in a given country or region; see the example of China or Russian-speaking countries, where the leading social media site is not Facebook but QZone and VK, respectively [Cosenza, 2015].

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Blogs as “just-in-time-teaching” method in virtual space

Ewelina Twardoch

Introduction

In the paper I would like to consider blogs as educational methods in higher education. Many authors [Mortensen 2008; Lankshear, Knobel 2006] suggested that blogs have a great potential in supporting the learning process. Blogs are often perceived as easy form of communication, as rather entertainment than teaching tool, but in referring to the assumption of selected authors (first of all Jude Hidgon and Chad M. Topaz according to whom blogs are excellent example of “just-in-time-teaching” method), and my own experience, I would like to show that blogs can be a space that helps to engage students in systematic learning. Moreover, I would like to treat blogs as a form of a performative space – created up to date, where lecturer and students can share their comments and observations, not just during one classes per week.

In my paper, in the presented theoretical context, I am going to introduce my experience with using blogs during the academic course in my Institute (Institute of Audiovisual Arts) among full-time students of the third year of study and I will compare my observations with A.F. Pearson’s conclusions on her using of blog methods with around 260 students during the introductory social problems course [2010].

A.L. Leuhmann and J. Frink define blogs as follows: “A blog is a frequently updated personal online space (a type of web page) where an author publishes a series of posts, engages others in discussion about her posts, and collects and shares resources; these posts are searchable by categories and typically archived in reverse chronological order, sometimes over a long period of time thus presenting the most recent work first while preserving the history of posts” [2009, p. 276].

Even in such short definition, the authors mention two issues important for using blogs as a higher education method: they describe blog as a space, and as a place for discussion. Nowadays it is hard to deny that blogs are an important part of popular culture and visible and element of cyberculture – culture that is based on the development of digitalisation (so the technology) and related to the new

forms of communication – through language, but also all forms of multimedia. They are rooted in virtual space, so the reality available by immersive media and some computer devices, but they are always created by the people and their practices from the real world. Therefore, they are rather at the edge of virtual and real space, some hybrid environment.

Blogs are often threaten also as a new kind of personal expression, and it is nothing surprising because they help to present our observation, thoughts, emotions. They replace old-fashion forms of diaries, and also some journalistic genres – as essay, news, feuilleton. In the paper I am going to show that are the interesting teaching and learning method in higher education. It is so also therefore, they are usually available for free, easy to create, edit and administrate. They important element of political debates, marketing and advertisement. However, blogs are still perceived as an easy form of communication, as entertainment rather than a tool of development.

Therefore, in reference to assumptions by selected authors dealing with blogs as well as to my own experience, in the paper I would like to show that blogs can be the very first space in the teaching and learning process – a method which helps engage students in systematic learning. I am going to present my own experience with using blogs during the academic courses at the Institute of Audio-visual Arts at Jagiellonian University, among third-year full-time students of the specialty Film and New Media Studies. The blog was created by the whole group during the course Issues in Cyberculture. I will compare my observations with A.F. Pearson's conclusions on her use of blogs as teaching method. In the paper I would like to refer to my own experience, but my main aim is to introduce some important research on blogs in the context of using them in higher education. The most crucial to me are theses by J. Hidgon and Ch.M. Topaz, who treat blogs as an excellent example of the "Just-in-Time-Teaching" method, as a tool which helps gather students' answers in one place and create a specific learning environment [2010]. I am going to refer to the assumptions by A.L. Luehmann and J. Frink arising from their research on classroom blogs. Both authors claim that with the use of blogs students are centrally in the discourse of science, they can be an active party creating and sharing scientific knowledge [2009]. I also would like to perceive blogs as part of a method which provides students with new forms and formats of participation and teaches how to present ideas and arguments publicly, also in so-called digital environments, cyberspaces, extremely important in expressing their own participation in the public sphere. Therefore, I am going to consider blogs as a performative space – created on a regular basis, where the lecturer and his or her students can share

their comments and observations, not just during one class per week, but in a performative space (my understanding of such category follows the definition of E. Fisher-Lichte [2008]) – so the space to share opinions, but also to create interesting reflections on culture's development.

1. Theoretical background: The role of blogs in higher education

We can find reflections on the learning affordances of blogging in many papers referring to education. Among those for instance the following are worth mentioning: first by Poling [2005, pp. 12-15], who claims that because students have to read and comment on each other's posts, it provides a form of deeper interaction between them. The problem with interaction and positive (reflexive, but not critical) among the group is really serious problem also in the higher education, so as I have mention in the introduction, crucial with using blog method is also some quite well possibility to create familiar and proper environment of learning. The second one is the notion by Luehmann and MacBride [2008] that blogs as a technological solution offer tool as well as a venue to extend discussion among students also outside the classroom and even during time outside of school. It build a form of engagement which allows to keep attention on the topic of the study at least during the whole semester, not only on the classes. All such reflections on blogs as tools and methods supporting the learning process are also adequate for higher education, but I would like to add one more, very relevant for adult students: the possibility of being creative and independent. It is possible to achieve especially when the rules of writing a blog are not very clearly defined and students can choose topics about which they want to write. According to my opinion and observation, especially when the studies should encourage to being creative, to give some freedom to students is not a bad solution.

Following the other reflections on blogging in higher education, I need to admit, that I agree generally with A.L. Luehmann and J. Frink, whose theories on the functioning of blogs in education are based on their experience with teaching young students (mostly from primary schools) in classrooms [2009, p. 275]. They do not have experience with higher education, although their assumptions appear adequate also for teaching at this level. The authors focus mostly on the classroom environment, its development, and the learning process, claiming that teachers usually offer their students only time-limited classes with a clear structure and students have mostly passive roles – they have to absorb knowledge – because of certain institutional and historical conventions in teaching. Such way of learning, especially in the epoch of technological possibilities that offer a lot

of stimulus, appear them boring, but also inadequate for their needs in the real life. If learning is only a boring experience, a duty, it is not easy to share the knowledge. According to Luehmann and Frink the new teachers-students relationships require “a new form of classroom learning that engages students centrally in the discourse of science, placing them in the collaborative and creative position of co-constructors and critical consumers of scientific knowledge” [2009, pp. 275-276].

They also add that: “Social networking technologies such as blogging have the potential to offer reform-minded teachers unique support that may address many of these challenges” [Luehmann, Frink 2009, p. 276]. So the authors think that one of the solutions might be using new technologies connected with the development of the internet, especially social media. According to Leuhmann and Frink, blogging is also part of the New Media Literacies (NML) project. It is pretty much interesting idea, and the main goal of it is to produce “skills and practices that capitalize on the affordances of emerging technologies to both consume and produce new knowledge within social communities and collaborations” [2009, p. 276]. Leuhmann and Frink mention also five crucial affordances that they observe in their empirical research, and the first of them is “long-term scientific engagement” [2009, p. 277], which is of course strongly connected with the “technological nature” of blogs: they have the possibility of archiving posts, linking to other pages, reading something a number of times. Using social media tools to engage students in the learning process is still controversial idea, probably because is associated with the entertainment area. But probably is only seeing danger where it is not so much. The most important task for teachers seems to establish new forms of student engagement in the learning process, that is creating and sharing knowledge, and therefore using tools which they are familiar with could be important and efficient solution.

Another interesting suggestion, crucial for this paper, concerning analysis of blogging in education comes from the Just-in-Time-Teaching methodology adapted by J. Hidgon and Ch.Topaz [2009], based on the classical pedagogical idea offered by Novak et al. [1999]. JiTT uses “web-based tools to gather students’ responses to questions on pre-class reading assignments” [Higdon, Topaz, 2009, p. 105], and it is useful in the immediate catching of gaps in students’ understanding of problems discussed during classes. They just point out one of the main problem of teaching, that is usually caused by the lack of time during classes. JiTT is also a way of adapting social software for the teaching process. Such adaptation is not only and attempt to match to the fashion solutions, but to change the process of teaching and learning. Therefore, according to authors,

JiTT is, first of all, an answer to the revolution in consuming and producing information caused by the digital era. Blogs are an element of this evolution which became an important help for academia [Higdon, Topaz, 2009, p. 105].

Higdon and Topaz adapt this methodological framework in order to establish a method of using only free social software tools offered by blogs, wikis and RSS aggregators, and name it “Just-in-Time-Blogging.” From my perspective they just transfer the idea of JiTT, so of general education theory, to the field of new media technologies, especially to blogging. Although they develop the method for mathematics classes at universities, they claim that this solution can be adapted in any other fields and institutions [2009, p. 105]. As the authors maintain, the method requires a system within which students submit responses and some mechanisms which allow teachers to investigate those responses [Higdon, Topaz, 2009, p. 105].

Both, the methods offered by Novak et al. as well as Just-in-Time-Blogging, are primarily used to investigate students’ understanding of analysed problems by asking simple questions about what is difficult or incomprehensible to them. Using even a brief questionnaire after every classes is really problematic. And even more problematic is to answer all the questions and doubts during classes. When we use blog, sometimes students get the answers even from their colleagues, and what is more, it is easier to observe their discussion and see the issues which are really important. For instance, if some issue is problematic only for one students, it is probably only her/his problem: she/he was absent on the classes, has no ability to understand, etc. But when some issue is difficult for the half group it is the sign that a teacher should explain such issue one again. Blog as a tool to investigate students reactions and levels of understanding of learning material is really good solution. From my perspective the best free-available so far.

Another important part of Higdon and Topaz reflection on JiTB is the presentation of common questions and concerns. They are in fact quite reasonable objections, I suppose, in case of every attempt, in almost every higher school, to introduce the blogging method. There are three main problems in reference to the blog method. The first is lack of computer skills necessary to implement the method. The second is students’ unhelpful attitude toward scientific blogging (they are unwilling to blog). The third is not enough time for teachers to check their students’ answers and investigate the whole process [Higdon, Topaz, 2009, pp. 106-107].

I suppose, as I have mentioned before, that such objections are reasonable in some cases, but basing on my experience, I can say that – in referring to the first objection – contemporary tools supporting the process of writing blogs are completely intuitive and easily available, thus some introductory classes during

which teachers could present how to use blogs would suffice to overcome those problems. I did such presentation, and afterward I turned out that my students are better than me in using blog tools. So, maybe teachers should trust in abilities of their students. Moreover, so far I have not experienced any lack of the willingness to cooperate on the students' part. They are extremely interested in the new method and I have not received any negative comments. I am aware that it cannot be the general rule, and it is rather a property of the group, but maybe it is also the issue of motivation. To me, the real problem is finding time to investigate every student's activity on the blog. I will describe this difficulty in the next part of the paper, as right now I would like to emphasise that teachers in this method are required to devote to it much time outside the classroom, which should be free from work.

2. The issue of cyberculture and cybercultureblog

The crucial part of my reflections on blogs as a teaching method come from my personal experience as a young teacher and lecturer in the academia. So far I am a PhD student, so I do not teach many groups (about two a year). However, I am teaching from the first year of my PhD study. My affiliation is: the Institute of Audiovisual Arts at Jagiellonian University in Cracow. Our Institute offers course of the history and theory of film, certain issues connected with media studies, as advertisement, the theory of television, the workshops of social media, etc., and quite rich section of cultural studies, such as e-literature, issues in performativity or cyberculture. All of the courses usually have quite flexible programs and structures; therefore, as a result, there are some general standards, and students have to familiar with some classical theoretical works and papers, but in fact we have the possibility of deciding what to teach our students. Such flexibility is the chance and the challenge in the same time: we can realise many ideas of teaching, but we have to also develop a coherent and interesting program of the courses.

There are a few reasons why I have decided to use blogs as a teaching method with my students, but the most important was, that I found it crucial to ensure that not only did the students gain knowledge from texts, but that they were also able to learn from each other in order to create an environment centered around the topic of our classes. Such environment is a crucial part of a teaching and learning process, especially if the group is really dynamic and impulsive, and a teacher has to deal not only with the sharing knowledge, but also with maintaining the discipline in the group. Creating an appropriate environment is then as relevant as sharing knowledge itself. Hidgon and Topaz in their analysis of Just-in-Time-Blogging, which I have described above, also emphasised that: "knowledge-centered refers to a focus on disciplinary content from a rich con-

ceptual (as well as factual) perspective. [...] Community-centered refers to building opportunities for students to learn in a social context, collaborating with peers and learning as part of their classes, their school community, and the world outside of the classroom” [2009, p. 107].

The authors point also to two important issues: the process of shaping community focused on the particular topic and the fact that it is worth to build such community also beyond the classes.

My decision to choose the blogging method was also motivated by various other reasons arising from numerous observations on the proper process of education at a university. I was not the very first teacher at my Institute who had decided to use an unconventional teaching method (but it does not change the fact, that before me there was only a few), and I was aware of that, but I did not want to check their results, and therefore I did not know the possible outcomes of this method. I wanted to develop some form of teaching with blogs with one student group in the form of an experiment. And I was attempt to realise interesting, individual activities among the students.

This form of teaching with blogs was implemented during the course Issues in Cyberculture. The group was composed of third-year full-time students and it was not so big – it consisted of about 20 people. I created one blog with the use of WordPress platform, similarly to A.F. Pearson, because I agree with her that the software is easy to operate and offers its users many valuable functions [Pearson, 2010]. First of all, it is easy to publish various audiovisual materials, and it was important for me students, and to follow posts by each author – it is pretty much useful in the process of students evaluating. The name of blog was Cybercultureblog. I decided that it will be only inside-group platform, so not available publicly. It was the first time of using blog for educational purposes for my students, so I wanted that they feel more comfortable in sharing their thoughts. The period of creating blog was over four months, so one semester. The students had to put on the blog 16 notes in total, so one note a week, and one essay per month during the first three months, so three essays per semester. Notes had to be about 1,000 characters and essays – about 5,000-7,000 characters long. The topics were in fact arbitrary, but the students had to relate them to the topics discussed during the seminar and to current events of cyberculture. The students were not on the first year of their study, so I decided that I give them their own voice in reference to the discussed issues and phenomena. I suppose that it was more fruitful than motivating them only to discuss scientific papers. Each post was written individually by my students, therefore, I did not have any problem with identifying the authors, even if they were undersigned with their aliases. I was able to investigate the works of each student and evaluate every pots.

When it comes to evaluating, I decided to evaluate each essay right after posting. I evaluated first of all regularity of posting, so I checked if they worked in a systematic way. I focused especially on the topics of the posts, on substantive content, on the way of building argumentation. I evaluated them in an usual way – as other texts. I had the point scale, and I evaluated them with marks. Extremely important were also for me other forms of blogging activity, so the participating in the discussing of posts of other students. And I have to admit that I had any problems with encouraging my students to discuss and comment – they were extremely active blog users. Usually they were also pretty much constructive in their assumptions, critique and doubts. I am aware that such engagement in the leading a blog is quite rare among the students, but I have exclusively positive experiences when it comes to the evaluating the activity and engagement of my students.

After the course some students stated in the correspondence which we exchanged that they were grateful for the opportunity to express their opinions, to share with doubts and reflections. It was also a valuable experience because it transpired that three of my students who did not talk much during the seminar were extremely intelligent and interested in the course. They said that they had never before had a chance to be so active during classes. This opinion was shared by 95% of all the students in a short questionnaire which I gave them after the semester. About 85% of the students admitted that activities with the use of blogs had improved their writing and critical thinking skills. It is really a lot, and even if I take into consideration only this percentage scale, I am convinced that I managed to achieve with the use of this method similarly beneficial results to those mentioned by A.F. Pearson: “Beyond keeping up with the readings, students also frequently commented on the learning benefits of the blogs, both in terms of understanding course content and improving their critical thinking and writing skills” [2009, p. 211].

Blog activities of my students enabled me to see in what my students were interested and which issues related to cyberculture they regarded as the most relevant. Therefore, their topics were sometimes the starting point to the discussion during the classes. Moreover, I have to admit, that my students posts were surprisingly well-written, interesting and definitely related to current events relevant to the development of cyberculture. It is a reason, why such kind of blog could even replaces the textbooks in teaching – textbooks usually very quickly become out of date, especially as regards the field of new media, and blog as a “work in progress” is always actual collection of information.

In reference to my observations, I would like to also consider blog activities as the process of creating a scientific and community performative space. According to E. Fisher-Lichte, the performative space, that was primarily theatrical

space, it is not the physical space of the stage with particular parameters. It is more of a volatile space created by means of interactions between actors and viewers [2008, pp. 174-175]. The digital space of the blog is exactly the kind of space created in discussions, by means of expressing opinions and asking questions. It is dynamic and remains in the permanent process of creation. As E. Fisher-Lichte claims, in the performative perspective of the greatest significance is the experience of participants, deep, real participation in actions and cooperation with the author [2008, p. 20]. In such a way passive observers become active participants [Fisher-Lichte, 2008, p. 16]. Therefore, a performance means a community event, and the production and reception of such an event is incorporated in one experience. I believe that this definition of the performative practices describes the process of gaining engagement among students working with blogs very well. Sometimes this kind of activities it becomes their only chance to participate intensively in the process of learning. It is worth to add that the blog environment functions as a safe place of cooperation between the students and the teacher and it helps establish a specific scientific community, which is an important part of a performative space [Fisher-Lichte, 2008, p. 80].

Conclusions

Many authors [Mortensen 2008; Lankshear, Knobel 2006] suggest that blogs have great potential in terms of supporting the learning process and my paper agrees with them. There are of course many theoretical reasons why blogs may be relevant for creating new learning possibilities, but one should remember that this theoretical approach is more valuable when it is based on everyday practice, that is teaching with blogs. Only empirical experience can show whether our way of using blogs in teaching is important and brings efficient, rewarding effects.

The processes of teaching and learning are important, with teaching based not only on sharing and gaining knowledge but also on creating a specific environment to engage and to support critical and creative thinking. It is especially the case when the teaching-learning process pertains to new media studies. In reference to my observation, I should say, that the blogging method appears to have been very useful in the process of teaching. The kind of activities engaged all the students, even those who were shy and quiet during regular classes. They were satisfied because they could share their ideas with others and felt that they were treated and evaluated individually. The process of writing a blog motivated my students to look for additional information and – paradoxically – read scientific papers, so to work individually. It probably is not a perfect solution in order to ensure better teaching especially because it requires much additional time from

the teacher or lecturer – according to me experience three groups per semester using blog-teaching is the maximum. However, it is worth trying to make better the process of teaching. Moreover, it is probably only one form of ‘just-in-time-teaching’ that is so easy available and inexpensive.

What is more, students’ scientific blog activities, just as any other form of blogging, are an interesting area for analysis from other perspectives than that of education. It is the topic of a separate paper, but even considering educational blogging in terms of creating a performative space based on performative practices can introduce such “forms of entertainment” as important elements of popular and cyberculture.

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Blogs as means for promoting active learning: A case study of a Thai university

Dorota Domalewska

Introduction

This paper reports on a case study that analysed blog-assisted learning as a strategy to promote active learning and increase connectivity among students. Twelve undergraduate students enrolled in the Foundation Course at a private university in Thailand participated in the study. The blog content and comments the students left on each other's blogs were analysed aiming to reveal students' involvement in blogging activity. The findings suggest that the frequency of publishing both posts and commentaries was low; thus, it was impossible to build a close social learning environment. Most comments posted by the learners were isolated; they did not generate any discussion and did not offer constructive feedback. Despite low involvement in blogging activity, the analysis of blogs published by the most active students shows that the project promoted dialogue and connectivity among the participants; thus, blog-based projects have the potential to build supportive learning environment.

1. Theoretical background

Increase in technology used for instructional purposes has revolutionised traditional teacher-centered and text-based education. Technology-assisted learning offers individualised content in and outside the classroom (e-learning and mobile learning) thus increasing students' learning spaces. Web 2.0 tools help students abandon the role of being a passive recipient of information and encourage them to become active and interconnected in the process of receiving, digesting and evaluating information. Weblog, or blog, is a new educational tool that is becoming more common in the classroom. Blog-based activities include writing class-related information and reflective journals, stories, discussion topics, but blogs can also be used to communicate with the parents. Students can also peer review and comment on other students' work, collectively prepare writing assignments or projects. Thus, blog assisted learning helps to create a collaborative learning community as bloggers share their ideas that are read by other students. Therefore, learning becomes a social activity as students can express their reaction to

the blog entry by posting a comment; thus, writing has the potential of becoming a functional and authentic asynchronous communication between the writer and reader. Students' writing is evaluated by an authentic audience [Heskett, 2009]; thus, classroom writing serves a practical purpose of sharing information and opinions as well as creating a sense of connectedness with classmates. Interaction promoted by blogging extends learning space beyond the classroom and facilitates collaboration [Davi, Frydenberg & Gulati, 2007; Flatley, 2005; Williams & Jacobs, 2004; Oravec, 2002]. Students can express and comment on each other's opinions resulting in a rich, meaningful and informative discussion. A feeling of community is fostered [Badusah, Razak & Romly, 2009; Garcia, Brown & Elbeltagi, 2013] in which peers offer constructive feedback. Students' contributions help develop a general meaning and a collective of knowledge [Angelaina, Jimoyiannis, 2012; Davi, Frydenberg & Gulati, 2007].

Technology brings new dimensions to learning. Media have the potential to improve learning space by increasing interaction, providing more opportunities to construct meaning through communication, enhancing active learning and creating a community of inquiry [Garrison, Anderson, Archer, 2000] in which members offer social and emotional support to one another [Rourke et al., 2007]. The community of inquiry is a group of people who work together to create personal meaning and foster understanding. Blogging activities help to create such a community as a content space and a discussion space of a blog is collaboratively built and then integrated [Yang, 2009]. Engagement in peer community supports active learning; students become more engaged in learning and more creative [Badusah, Razak & Romly, 2009].

Students engaged in blog writing tend to write more thoughtfully [Flatley, 2005] producing a superior quality text than a traditional composition that is read by the teacher only [Todras-Whitehall, 2005, p. 8]. Bloggers need to produce clear content [Williams, Jacobs, 2004] that is more concise [Beeson, 2005] and logical as the text is read by a larger audience. Furthermore, blogging activity helps to develop critical thinking and facilitates integration of ideas and construction of meaning [Angelaina, Jimoyiannis, 2012]. Developing a collaborative blog and commentaries requires students to reflect on the information they read, analyse and synthesise; thus, students move from superficial understanding of ideas to greater insight [Arena, 2008]. When they write, learners need to select information, recognise ideas and personalise content, which leads to developing higher order thinking skills.

Research also shows that students' involvement in blogging activity is not related to their class competence. Thus, this form of expressing themselves allows shy students to participate and be more active than during class discussion [Angelaina, Jimoyiannis, 2012; Arena, 2008]. Students are responsible for their own learning as they need to create their own blog, share knowledge with their classmates.

Blogging can be used to enhance learning in a variety of courses, e.g. business education [Davi, Frydenberg & Gulati, 2007], journalism class [Beeson, 2005], marketing courses [Hazari, O'Meara Brown & Rutledge, 2013]. When used in a foreign language classroom, students are encouraged to write, revisit, reflect on the feedback, and comment on each other's work, they find the writing task interesting, purposeful and relevant. Hence, blogs have a potential for increasing student interaction sharing and social skills [Gedera & Pahala, 2011].

According to Campbell [2003], there are three types of education blogs for ESL students. First, the tutor blog is run by the teacher in order to give course information, to provide links for self-study online materials, to offer extra reading practice of both the blog post and other related articles linked to it. Another type of blog is the blog run by individual learners or groups of learners as a form of writing and reading practice. Finally, all students contribute to a class blog that not only provides current information on the course and homework, but also gives the opportunity to develop research, reading and writing skills. Thus, blogging activities give writing a meaningful purpose. Furthermore, students' motivation is boosted when their posts are read and commented on by authentic audience. However, in order to be able to engage productively in the task, learners need to be competent users of L2 who can do at least moderately well on written tasks.

A large body of survey research suggests that blogging activities are positively perceived by learners. Students like to interact with their classmates and express their thoughts in blogs [Badusah, Razak & Romly, 2009]. Hazari, O'Meara Brown & Rutledge [2013] found that the students who took part in blog-assisted learning report a higher level of motivation, collaboration and active learning. Furthermore, the respondents enjoyed the fact that blog is such a creative form of expression.

Undoubtedly, blogging is a pedagogic tool that offers numerous benefits. However, technology free, communicative classrooms also facilitate learning, boost motivation and enhance writing skills. Lin, Lin & Hsu [2011] compared the results of blog assisted learning and traditional writing class and found that both approaches significantly improve students' writing skills.

Blog-assisted learning brings several limitations. Some students might be anxious of publishing a text that contains errors; they can be also inhibited to post comments on their classmates' blogs. Liu and Hansen [2002] argue that the students' feedback may be constrained by the following factors: learners' cultural backgrounds, their communicative ability and the mode of peer feedback. Another drawbacks of introducing blogging activities in the classroom is decreased motivation when comments prove to be either vague or spiteful. As claimed by Gedera & Pahala [2011], some students find it difficult to offer constructive criticism on their peers' posts without being rude or hurting the others' feelings. Furthermore, research shows that not all students were involved in the process of group interaction [Garcia, Brown & Elbeltagi, 2013]. Frequently students need to be encouraged by the teacher to start and comment on each other's blogs; that is why blog-based tasks need to be carefully structured: open discussion questions should be asked, the workload should be evenly distributed, the teacher needs to take an active part in the discussion moderating interaction between students and inviting engagement [Forster, Tam, 2006]. This, however, imposes a burden upon teachers for whom blogging activities are time-consuming as the design and maintenance of the class blogs requires teachers to spend a significant time in front of the computer. Furthermore, it is more challenging to grade online posts [Hazari, O'Meara Brown & Rutledge, 2013].

2. Methodology

The current study focuses on examining educational purposes of blog-based projects. Numerous studies prove that blogs can create a learning environment that extends beyond the classroom. Blogging activity helps to develop learners' writing skills and makes them more engaged in learning. However, various research studies report contradictory results for the use of blogs to promote social learning. The purpose of this paper is to investigate to what extent blogging supports interaction and collaboration among students in a foreign language classroom through the analysis of comments the students leave on each other's blog. Thus, the study attempted to answer the following research questions: (1) to what extent do blog-based projects promote active learning? (2) do blog-based projects increase engagement and connectivity among students?

The study adopted a qualitative case study approach to examine the students' participation and involvement in web-based projects due to usefulness of the method to explore and explain the phenomenon within the context in which it occurs [Yin, 2003]. Content Analysis was employed to examine blog-based projects since this research technique provides the objective and systematic analysis

of the discourse [Berelson, 1971]. First, inductive categories were formulated and tested for reliability. The structural features of blogs were coded including the number of entries and comments each student posted, average length of entries and comments, age of the blog and content type of comments (e.g. informative, relationship, personal). Next, the relationship between blog posts and comments was studied in order to determine whether blogs promote connectivity and cooperation among learners.

Data collection occurred over a period of 3 months. Data were gathered from student blogs and students' comments to each other's blogs. Each student set up their individual blog within a first year Foundation Course that runs for 15 weeks thus 12 blogs were created with 62 blog entries and 30 comments. Blog activity was a teacher-graded assignment; the points that the students earned were added to the students' final score. The project requires the students to write at least 6 blog entries and comment on each other's contributions. The subject matter of the blogs should be closely related to core concepts of the course; however, the learners were encouraged to make their blogs personal and post their opinions and experience in order to create more personalized and meaningful learning environment. The blogs could be accessed by all students but they were not available to the public. Both learners and the teacher could comment on other students' blog post as well as respond to the comment left on their own blog.

Twelve undergraduate students enrolled in the Foundation Course at a private university in Thailand participated in the study. The sample was selected based on the writing proficiency of the students (pre-intermediate). Writing proficiency criterion was employed to ensure the students can produce a comprehensible text in connected discourse on various topics. Participation in the research project was voluntary and informed consent from research participants was obtained prior to the study.

3. Results

The students in the sample were moderately involved in creating a supportive learning community. A total of 92 posts were published in the blog-based project. The length and age of the blogs were also analyzed. The age of the blog was calculated by counting the days between the day when the first and last entry was posted, with the average blog age at 12.58 days. The results of the analysis are illustrated in Table 1.

Table 1. Structural analysis of blog posts

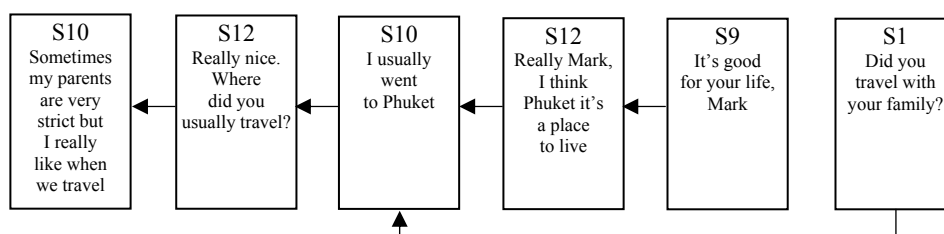
Specification	M	SD
No of blog posts	5.17	1.34
Average length of posts (in words)	58.09	18.45
Age of the blog in days	12.58	11.48
No of comments posted	2.5	3.54
Frequency of posting comments in days	1.08	1.44

Table 1 shows considerable difference in the number and length of blog entries and posts published. The majority of students published 6 posts, which was minimum course requirement. The word count of the posts ranges from 18 to 168 (mean 58.09; SD 18.45). The frequency of publishing both posts and commentaries was very low. A third of all blogs were published on one day, which shows that the students wrote their blog in order to pass the course. Low frequency of blogging shows the students' lack of involvement in the task and low motivation to engage in learning.

All blogs were in both photo and text format; choosing the right images provided the students with an opportunity to extend their writing skills. However, fewer than half of the learners (5 out of 12) posted comments on their classmates' blogs; roughly half of the posts triggered comments. Comments were not posted regularly, but they were published within a couple of days, which suggests lack of involvement in the project. Furthermore, the learners posted a commentary and replied to any comments on a single day or within two days. None of the students reacted to a post if it was published on another day that their original post or commentary was published, which implies that the students did not read the comments their classmates posted on their blog entries. For the students, blog-based project was another teaching activity rather than a space for discussion and exchange of ideas.

Despite low involvement in blogging activity, the analysis of blog-based projects of the most active students shows that the project promoted dialogue and connectivity among the participants. Figure 1 depicts a chain structure illustrating the evolution of a topic initiated by student S10.

Figure 1. Chain structure of blog comments



Chain is a linear structure that presents a sequence of posts and comments as well as links between the ideas expressed by bloggers. Four participants were involved in discussion; the comments were personal and aimed at building relationship among the participants. The comments offered by the students did not refer to the original post but to the comments offered by other students, e.g. the comment posted by S1 clearly shows the student has not read the original post, which is the answer to the question that has been posed in the commentary. Thus, the discussion is superficial and restricted to a single aspect of the original post.

The linear development of commentaries can be clearly seen as new comments are related to the previous or the next to last comment rather than the post itself. The dialogue is quite simple though ideas are meaningfully related and aimed at building positive relationship with other students. Finally, Table 2 provides the thematic analysis of blog comments.

Table 2. Content type of comments

Comment content type	No.	%	Isolated or exchange	No.	%
Informative	12	40	exchange	3	10
			isolated	9	30
Relationship	9	30	exchange	2	6.6
			isolated	7	23.3
Personal	4	13.3	exchange	2	6.6
			isolated	2	6.6
Repetition of previous comment	4	13.3			

Table 2 shows information on the content type of each comment. Commentaries posted on social media pages serve the following functions: informative, building relationship, and personal. Following this classification, the data have been coded according to the function the comment serves. Table 2 also illustrates whether the comments generated feedback (exchange) or whether it was an isolated commentary compared to content categories. A vast majority of commentaries fall into the category of isolated comments; less than a quarter of comments provoked online discussion. The bloggers most frequently offered feedback that was classified as informative: these comments referred to the information written in the post (e.g. “Fry rice. Good a food”) or asked a question for information (e.g. “Why you wanted to go there?”). Other comments aimed at building relationship with the classmates through an invitation or offer (e.g. “why not go Chiang Mai with me”), positive comment (e.g. “Petch you very good boy”) or opinion (e.g. “petch i think fry rice it’s best Thai food”). Personal comments included asking questions about personal information (e.g. “What’s your address?”) or giving personal information (e.g. “I like play golf”).

Only one fifth of all posts have generated feedback. The commentaries were rather concise; the most lengthy comment consisted of 12 words (“Why you want to know my address? I don’t live Bangkok”). The shortest one was a one-word commentary uploaded by 2 different students (“Good”). Some posts were a repetition of the previous comment, most probably due to involuntary clicking on the “post” button.

4. Discussion

The present study aimed to explore the learners’ participation and engagement in web-based projects. The findings of other studies [Angelaina, Jimoyiannis, 2012; Davi, Frydenberg & Gulati, 2007; Flatley, 2005; Heskett, 2009; Williams, Jacobs, 2004] show that blogs offer ample opportunities of active learning where students at the same time work individually and share their knowledge and opinions in a supportive learning environment.

Educational blogs provide opportunities for increased learning spaces and student participation since every learner is responsible for his or her individual contributions. Thus, students take responsibility for their own learning being involved in an authentic task. Nonetheless, the present study does not support the claim that blogging activity allows increased collaboration among learners. Due to low active engagement in the project on the part of some students, it was impossible to build a close social learning environment. The students rarely posted commentaries on each other’s blogs and their comments did not trigger a response mainly due to the reason that some students delayed carrying out their project till deadline. Most students carried out the project and published the minimum number of entries as it was the course requirement. Each post was fairly short yet sufficient to get a passing grade. Moreover, the frequency of posting was very low. The commentaries were isolated in nature and did not encourage other students to take part in online discussion. Constructive feedback was not offered as the comments mainly provided additional information and were not specific in nature. The discussion is superficial and restricted to a single aspect of the original post or the previous commentaries not the post itself. Although blog posts and comments were limited in number and frequency, all comments were positive; thus, blog-based projects have the potential to build supportive learning environment.

It remains to explain why the classroom blog used in the study provoked little interaction between students although numerous studies indicate increased engagement and activity of participants [Dujsik, Cai, 2011; Gedera & Pahala,

2012]. First, writing blog and commenting on each other's posts did not generate a high level motivation. The students, whose level of proficiency was pre-intermediate and intermediate, could have found it easier and more accurate to communicate in their native language either face to face or through various social networking sites. Thus, the learners were more likely to look for face to face relation or social networks in their native language to strengthen their relation with other learners. Moreover, they could have felt uneasy to offer comments on their classmates' blog entries as they might have been subject to criticism (of their content or structure) offered by the teacher or other students. Garcia, Brown & Elbeltagi [2013] argue that lack of confidence in their own opinions undermines students' motivation to participate in blogging activities. Furthermore, the researchers claim that a number of students are reluctant to share their own opinions.

In the study the teacher acted as moderator of online activities. However, instructional use of blogs will be increased if one of the students was the moderator for the course blog rather than the teacher thus making the blogging activity more learner-centered. The change of moderator could develop the students' involvement in the activity.

Furthermore, blog, especially if it is written in a foreign language and thus requires a great deal of consideration of the content of the comment, proves to erect a barrier to post candid comments on the classmates' entries. Blogs and other social networking sites create a ground for communication where objectivism is hard to achieve and where feelings are easy to conceal. Genuine conversation in the classroom that is provoked by various communicative activities proves to be a better means of practicing the foreign language.

Conclusions

Blog-assisted learning greatly benefits students as it enhances learning, develops higher order thinking skills and helps them become autonomous learners. Being engaged in an authentic activity and producing a text that is read by authentic audience should be highly engaging for the students. However, the findings of the present study show the students were reluctant to participate actively in the blog-based project; they contributed with limited blog entries and scarce commentaries that were published on one day, which implies they wrote their blog in order to pass the course. For many students, blog-based project was another teaching activity rather than a space for discussion and exchange of ideas. However, the analysis of blogs and commentaries published by the most active students shows interactivity and interconnectedness the activity has promoted.

Some posts triggered commentaries that were meaningfully related and aimed at building positive relationship with other students. Thus, blog-assisted learning could become a social activity; however, the activity requires careful planning, monitoring and evaluating. In order to increase student participation, it is advised that the teacher facilitate and contribute to online discussion. Further research with greater student numbers is necessary to investigate collaborative writing and strategies that could be used to increase students' engagement in blogging activities.

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Opportunities and threats of social networking in higher education

Piotr Rodak & Wojciech Kubasik

Introduction

Higher education is progressively using social media in education on a higher level to endorse teaching, training, learning development and education procedures. Most of the online applications offer different kind of mind incitement with social media background and also add more interaction between students and educators. Moreover, apart from the benefits of introducing a social program in the educational environment, can also have a negative influence on students, teachers and education institution as a whole. Aim of this paper is to examine the various consequences of a social program in the environment of the higher education level course in order to identify the associated benefits, but also potential disadvantages.

1. Theoretical background

Social networking can be defined as “applications and services that facilitate collective action and social interaction online with a rich exchange of multimedia information and the evolution of total knowledge” [Parameswaran, Whinston, 2007, p. 762].

In other words social media is the social interaction among people in which they create, share or exchange information and ideas in virtual communities and networks depend on mobile and web-based technologies to create highly interactive platforms through which individuals and communities share, co-create, discuss, and modify user-generated content.

Various studies have demonstrated how social networking activity can support educational environment. Different online services may take part in the stimulation of cognitive processes, relational exchange and facilitate the act of learning, all of which are necessary for the enhanced educational experience of students [Garrison, Akyol, 1999]. Wikipedia as one of many examples is a platform for the knowledge integration that goes directly to the cognitive development of students [e.g. Pena-Shaff, Nicholls, 2004] to serve. Another example is the use of social networking tools that can create social relations and contacts among students, and might be related to their psychological well-being [Ellison, Stein-

field, Lampe, 2007]. Next example is the use of discussion forums that create not only a platform for the exchange of knowledge among students [Pena-Shaff, Nicholls, 2004], but also allows to observe and cause to interaction between group of educators and students [Dennen, 2005]. Based on learners ability to support multiple social applications, teachers have the capability to directly contribute to the processes of teaching and learning of students. Using social software gives the opportunity to feel new quality of education and experience new approach to the whole learning process.

As of January 2014, 74% of online adults use social networking sites:

Table 1. % of Internet users within each group who use social networking sites

Who uses social networking sites	
All internet users	74%
• Men	72%
• Women	76%
18-29	89%
30-49	82%
50-64	65%
65+	49%
High school grad of less	72%
Some college	78%
College+	73%

Source: [Pew Research Center..., 2014].

For over 40 years from now, educational institutions have begun acquiring different electronic support, such as audio tapes or radio as channels of additional distribution of knowledge. Growing demand for higher education in these years created a perfect moment for media channels to meet the needs and step by step overcome the limitations connected with the traditional lecture-based delivery [Gerhard, Mayr, 2002]. Continuous spread of the Internet in 1990s, presented a significant acceleration for Internet innovation in education. E-learning becomes an online interactive form of education supporting the supply of educational content in the network, a flexible consolidation of learning content along with regular teaching, and ongoing interaction between students and faculty through different software environments based on Internet [Romiszowski, 2004].

Nowadays higher education institutions are mostly supported by modern communication technology, largely in the form of Learning Management Systems (LMS) [Dalsgaard, 2006]. LMS, such as Blackboard or Moodle, are hosted by the individual Institutions where they form an integral part of the overall course management. These applications provide courses with virtual notice boards, document repositories and collaboration tools such as virtual white-boards and discussion forums. As these applications provide secure access rights and audit trails

they can also form part of the formal learning assessment. To date, LMS software provides the main platform for the integration of online media into traditional face-to-face course environments [Schroeder, Minocha, Schneider, 2010].

2. Opportunities of social networking

The external opportunities which are provided by social software are summarised in Table 2. External capabilities that are provided by social networking are provided in Table 2.

Table 2. Opportunities of social software

Opportunities
• Showcasing work to the public
• Incentivising students to create high quality
• Contribute to employability
• Creating and maintaining communities
• Development of alumni communities
• Social software tools help to foster cross-institutional collaborations

Showcasing work

Although the social software initiative is created within a course environment, public Internet-based applications are used as platforms to enable the student-teacher, student-student and teacher-teacher interaction. Therefore, assignments which are created as part of the course can therefore easily be accessed by users from the wider public. Not being restricted to the course environment allows students and educators to easily showcase their work to a large audience and even involve the wider public in the task. Opportunity to showcase work to a wider audience is appreciated by students and the prospect of a public audience encourage students to put extra effort in the task completion.

Incentivising students to create high quality

Using social media gives teachers a chance to support students more effectively, thanks to that learners are more willing to create high quality of their work. Moreover when their attempts might be helpful for other social group members it creates a feeling of responsibility for created and downloaded materials.

Contribute to employability

Social media is changing the way we all interact with one another and is fast becoming an integral part of what it means to be a student and a professional. Being able to demonstrate employability skills, as well as work experience, volunteering and general life experiences enable students to become more employable. The big three players connected with employability in social media are

LinkedIn, Facebook and Twitter, but there are also other social networks that can contribute to employability and careers research. Students who are having their own blogging and high quality online portfolio sites conducted can expect increased chances of getting a graduate level job.

Creating and maintaining communities

When using social software applications, students obtain logins, create profiles and in some applications even form relationships (e.g. social networking). Once such online profiles are created, they will often be used outside the course environment or even after the course has been completed. In our cases we could observe how students and educators maintained their initial course-based online presence to further develop their own communities which lasted well beyond the duration of the course.

Exploiting opportunities

The use of social software permeates the traditional boundaries of the course which creates a range of opportunities for presenting student work to the public and for initiating far reaching communities. Showcasing the student work creates significant opportunities for educational institutions to gain additional exposure and to add to the reputation of a particular course or study programme. However, in order to systematically exploit these opportunities the learning activities and the set up of the applications need to be specifically prepared for these endeavours. It is important that the activities and expectations are set in a way that the deliverables constitute contributions which can be understood and appreciated by the interested public. Such a public display of student work can further be enhanced by specifically linking prospective students or employers to the collaboration environments in which the students interact and contribute.

3. Threats of social networking

The ability of social software to bridge the boundary between the course and its wider environment not only creates opportunities, but introduces a number of threats to the social software initiative (see Table 3).

Table 3. Threats of social software

Threats of social networking
• Unable to support and ensure the reliability of the applications
• Difficult to ensure reliability of the service
• Difficult to adapt publicly available tools
• Resources may be misappropriated or may even disappear
• Consequences of illegitimate use
• Publishing of illegitimate content by students may affect the institution's credibility
• Protect the student space and their interaction from outside interventions
• Protect the anonymity of students

Support and reliability of the applications

Any applications that are hosted externally, especially social media, are not a part of a of e-learning tools provided by educational institution. Therefore, the IT department of each institution is limited in the extent that they can provide certain support and maintenance of applications, and even ensure their availability. These limits of control over the application must be taken seriously. When social application becomes an integral part of the course and involves the creation of designated tasks, all kinds of disruption in which the institution has no control could have consequences for the course and cause student negative experience. Adopting such publicly hosted applications introduces risk to the environment that teacher or IT support are largely unable to control.

Illegitimate use

Another important threat which involves the potential for using the social software application for illegitimate purposes. This illegitimate form of use may be caused by students but also by members of the public. Students may potentially use their access to the social software application to create inappropriate content or engage in devious behavior. Such an activity could certainly affect the credibility of the educational institution and therefore needs to be considered a considerable threat. Further, external members of the public may potentially enter a course-based student interaction and expose students to inappropriate content or devious behavior. Such a scenario might also create serious implications for the institution, the educator(s) involved and the students, and needs to be considered a serious threat [Schroeder, Minocha, Schneider, 2010).

Weakening the threats

Serious legal considerations which are associated with the use of social networking in the open domains makes us think that particular attention needs to put on the: interaction with learners in the public domain raises protection and privacy concerns because it is the duty of the educational institutions to protect student data; every assessment should be made using reliable tools and applications, so using public software creates a range of potential legal implications when the tools prove to be inaccurate or deceptive; both teachers and learners should also take into consideration that using of various materials in the public domain is likely to create copyright consequences. Social software is becoming more important factor on the educational market so all legal cases are becoming a large concern and need a lot of attention both in present time and in future.

Conclusions

Social software has created considerable enthusiasm in further and higher education sectors. The integration of these applications into the practice of teaching and learning has the potential to cause significant educational innovation because they enable new forms of interactive learning and collaboration. But the discussion only social applications, with particular emphasis on their possible advantages and disadvantages of ignoring the potential risks associated with these technologies. For full use of the benefits of social applications ensure that there is a need to consider the risks and disadvantages that could damage social initiative, and even cause legal effects software for the host institution.

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Part VI
Students and teachers toward new media
in higher education

New media in higher education and values for students on emerging markets

Slawomir Smyczek

Introduction

One of the priorities among the new challenges of contemporary world is providing education to students with professional background allowing them to work in an international environment. Thanks to new media people have relatively easy access to higher education. They are also more willing to increase their education level. However, the development of higher education services on the market through new media can be successful on the condition that universities will provide require values for students. First, because universities are public trust institutions, which should create special added value for whole society, and special for students. Second, because of character of higher education services, which make difficulties for students to evaluate them. And finally, because of internationalisation of higher education market within last decades which increase competition to whole higher education sector, especially in emerging markets, where higher education sector is still in process of developing. Nonetheless, the final assessment of the university performance will depend on the value expected by students. At the very initial stage of using new media by universities in emerging markets, like CEE countries, the goal of paper is to identify the values that are expected by the students from new media applied in higher education and present a model showing these values¹.

The paper describes the nature and scope of customer value in the market, especially the types of those phenomena and the methodological aspects of identifying this category. Our empirical study focuses on the value expected by students in higher education market and presents a models showing students' values according to new media. The paper shows the results of surveys with students of different types of universities. Field research were conducted in 2014 in five CEE countries: Czech Republic, Hungary, Poland, Romania, and Slovakia.

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1. Theoretical background

The category of value frequently appears in social sciences, including economics. Despite this, scientists find the category difficult to define and often avoid precise definitions thereof, which results in ambiguities hindering the process of researching value for patients. Due to the subjective and situational character of value, a decision was made to refer in the research to the concept of customer value as a basis for development of a research tool and for further analysis, both in terms of value for students and value for academics according to implementation of new media in higher education system.

The term *customer value* was first introduced in marketing theory in 1954 by P. Drucker when the concept of marketing corporate management was presented [Drucker, 1954]. Towards the end of the 1960s, this category appeared in the theory of consumer behaviour and referred to the concept of utility (benefit) and satisfaction, part of the theory of consumer choice [Howard, Sheth, 1969; Kotler, Levy, 1969]. Later, the use of its original sense was dropped, and the concept of “value” appeared only in studies into consumer behaviour, where it was considered to be declared and respected value, or value preferred by buyers (customer value). The notion of value for money recurred in its broader use in economic sciences at the end of the 1980s, thanks to M. Porter’s research into corporate competitive advantage and his development of a chain model of added-value [Porter, 1985].

M. Porter’s views on customer value (he called it value for buyer) were based on his abundant scientific work on consumers, including the results of research into consumer satisfaction carried out in 1980. Thanks to M. Porter’s study, the term *customer value* has been widely adopted in contemporary concepts, including Total Quality Management, Business Process Reengineering, Supply Chain Management, Value Based Management, and Customer Relationship Management [Szymura-Tyc, 2003].

Also in the 1990s, customer value reappeared as a subject of scientific interest in the theory of marketing supported by the theory of consumer choice, consumer behaviour, and consumer psychology. The term *customer value* was used alongside such notions as utility, benefits, needs, and satisfaction.

The reasons for the development of research into customer value were diverse. First, the concept of utility, a basic category of consumer choice theory, did not place enough emphasis on the costs borne by the consumer in the process of buying and using some definite goods. In consumer choice theory, utility was regarded as tantamount to consumer satisfaction with the benefits from using a product [Kamerschen, McKenzie, Nardinelli, 1991, p. 446]. Research into

consumer satisfaction demonstrated, however, that satisfaction experienced by the consumer depends not only on the benefits that the consumer gains from buying and using a product (utility) but also from the relevant costs that he/she must bear – Theory of Exchange Fairness [Jachnis, Terelak, 1998, p. 172]. This necessitated development of a category that could reconcile both the benefits gained and the costs borne by the consumer. Second, research into consumer satisfaction showed that satisfaction appeared only when the results from buying and using a product exceeded the customer's expectations of a product at the very moment of product selection – Model of Expected Discrepancy [Furtak, 2003, p. 146]. Considering product utility and satisfaction to be equal did not allow for identification of this relationship. Thus, it was necessary to find a category that would enable researchers to study the relationship between consumer satisfaction, his/her expectations with respect to products, and the results of purchase and consumption of products, with full consideration of both the benefits to be gained and the costs to be borne by the buyer.

All the research into the consumer and marketing has resulted in the development of the notion of customer value. The definition of the category was based not only on classical marketing theories but also on modern theories of behaviour and consumer psychology. Development of the notion was also supported by achievements in service marketing and conclusions drawn from a contemporary concept of relationship marketing. Researchers have also referred to M. Porter's chain model of added-value, which combines value for the customer with added-value for the buyer and the company. Many attempts have been made to define the concept of value for the customer as well as to determine attributes of the category and ways of measuring it.

V. Zeithaml defines customer value by exploiting the concept of product utility. Here, value is an aggregate consumer evaluation of product utility based on the consumer's perception of what is gained against what is given [Zeithaml, 1988, p. 14]. V. Zeithaml emphasises that customer value is a subjective and differently perceived category; whereas price constitutes a significant criterion, but its influence on consumers may vary. The author also observes that a clear and legible instruction manual or an assembly manual may be an important factor in a consumer's perception of product value. Moreover, value may be looked upon differently, depending on the circumstances of its consumption.

K. Monroe, in turn, claims that the value perceived by buyers comes from the relationship between the quality or benefits that the buyer recognises in a product and the perceived sacrifices (loss) he/she makes by paying a given price. K. Monroe claims that perceived benefits are composed of the physical attributes

of a product, attributes connected with accompanying services and technical support during product utility, as well as the price and other quality indexes. Perceived costs, in turn, comprise costs borne by the buyer during the purchase, such as the product price and the costs of purchase related to, for example, transfer of title deeds, costs of assembly, costs of exploitation, maintenance (repair) costs, failure risk, or product malfunction risk costs. By assuming that most buyers operate within financial constraints (in the theory of consumer choice, K. Monroe maintained that buyers were more susceptible to borne costs – sacrifices and losses – than to potential benefits), K. Monroe proposed that customer value be measured by the ratio of benefits to costs, and not by the difference existing between them. It is worth adding that the proposed concept did not elicit a big response in the marketing literature. However, the majority of researchers are inclined to define value as a difference (excess) between the perceived benefits and the costs. This seems justified inasmuch as the concept of the perceived costs signifies the cost that is subjectively perceived by the customer. Nonetheless, it should be borne in mind that different customers have different reactions to particular cost components (price, effort, time, etc.). With financial constraints related to their income, buyers may be more or less susceptible to price and other components of perceived costs [Szymura-Tyc, 2005, p. 69].

A considerable contribution to the definition of customer value was made by A. Ravald and Ch. Gronroos, researchers studying the concept of relationship marketing, who extended the definition of value proposed by K. Monroe. They pointed out that apart from the value of the product itself (the company's offer), there exists a distinct value, which is the result of the relationship between the transaction parties. In their opinion, there are many situations where, despite consumer dissatisfaction with one of the transactions, some prior positive experience that contributed to development of the relationship between the customer and the company encourages him/her to seek compromise. With regard to this, A. Ravald and Ch. Gronroos proposed to take into account the costs and benefits ensuing from the relationship between the buyer and the seller, along with the unpredicted "accidental" costs and benefits connected with a given transaction because they jointly influence the value perceived by the customer. Thus, they referred to concepts elaborated by consumer psychology, known as transaction and accumulated satisfaction, and to the Affective Model of consumer satisfaction. According to the authors, the so-called aggregate unpredicted accidental value is represented by the ratio of accidental benefits and benefits resulting from the relationship to accidental costs and costs resulting from the relationship [Ravald, Gronroos, 1996].

The concepts of transaction satisfaction, accumulated satisfaction, and the so-called attributive satisfaction were used at great length by R. Woodruff in his approach to customer value, which he defined as a composition of preferences experienced and evaluated by the customer. These preferences refer to attributes of the product itself; of its functioning; and, finally, of product consumption effects, thanks to which the customer can (cannot) achieve his/her goals and intentions in the process of product consumption [Woodruff, 1997, p. 142]. This definition represents a hierarchical system of customer value, which implies a need for its assessment at the level of the attributes of a product and product consumption as well as customer goals and intentions. Moreover, this system reveals not only the process of value development but also best represents the relationship between customer value and satisfaction. Thus, it can be treated as a basis for measuring the satisfaction derived from the assessment of value delivered to the customer [Woodruff, 1997, p. 143]. In his approach to the value definition, R. Woodruff demonstrates the dynamic character of customer value, which means that it may change with time. The need for a dynamic approach to customer value is also emphasised by A. Parasuraman, who points out that customers who make a purchase for the first time tend to concentrate on product attributes, whereas those who do it repeatedly pay more attention to the effects of product consumption and the possibilities of achieving certain goals related to definite goods (one product) or a service [Parasuraman, 1997].

Customer value has also been the subject of Ph. Kotler's analysis. He defined it as a difference between the total customer value and the total customer costs. The total value is composed of a bundle of benefits anticipated by the customer, whereas the total cost is made up of a bundle of costs expected by the customer in connection with the evaluation, purchase, and consumption of a product or service [Kotler, 1997, p. 38]. According to Ph. Kotler, the total customer value comprises the anticipated value of a product, service, personnel, and corporate image. The total cost, on the other hand, is composed of such costs as the money, time, energy, and psychical cost expected by the customer. In his definition, Ph. Kotler [1997, p. 38] emphasises the fact that customer value is not delivered to the customer (as Ph. Kotler initially declared), but is expected by him/her.

Alongside the definitions of customer value discussed above, the marketing literature presents several others that, in great detail, refer to selected issues connected with the concept of customer value. All the definitions reflect the multifaceted character of studies conducted by scientists and marketing theorists doing research on the category. Although not all of them are considered successful, the overview of the definitions helps to understand the problems encountered by

researchers. To provide some examples, B. Gale defines customer value as the quality perceived in the market in relation to the price of a given product [Gale, 1994]. Value in industrial markets is, in turn, a perceived equivalence, expressed in monetary units, between a bundle of economic, technical, social, or service benefits gained by a customer's company and the price paid for the product, compared to the offers and prices of other possible deliverers [Anderson, Jain, Chintagunta, 1993, p. 5]. According to S. Slater and J. Narver [2000, p. 120], customer value appears when product-related benefits outweigh the costs over the life cycle of the product being consumed by the customer. For the institutional customer, the benefits materialise along with the growth of a unit profit or with an increase in the number of product units sold. The costs over the life cycle of a product being consumed by a customer comprise costs related to finding the product, the operational costs of the product, the disposal costs of the product, and the price of the product. Customer value is perceived as an emotional relationship between the customer and the producer as a result of consumer consumption of a product or a service that, in his/her opinion, provided him/her with added value [Butz, Goodstein, 1996, p. 63].

Bearing in mind the definitions and achievements in the theory of consumer behaviour, consumer psychology, and marketing theory presented above, it can be concluded that customer value appears in the process of consumption of a purchased product. This value is developed through a consumer's subjective estimation of costs and benefits after product purchase and consumption. These costs and benefits are the only significant element in the assessment of the value obtained by the customer, and customer value itself represents a predominance of benefits over costs perceived by the customer. Based on this, one can venture a statement that customer value is an excess of subjectively perceived benefits over subjectively perceived costs related to the purchase and consumption of a given product.

Benefits gained by customers are connected with the needs they want to satisfy through some product purchase and product consumption. Individual customers seek benefits that can meet their consumption needs. Costs, in turn, have a financial dimension connected with the exchange of goods and money between the company (seller) and the customer (buyer). Besides the financial costs, there are costs that refer to time loss, inconvenience, extra efforts, negative emotions, and other costs for consumers.

In the discussion of customer value, a distinction should be made between the value that is expected and the value that is obtained by the customer. The value expected by the customer can be referred to as an excess of subjectively perceived and expected benefits compared to the costs relating to product purchase

and consumption. In light of this definition, such a value constitutes the basis for customer market choices, and is closely related to the concept of utility in the theory of consumer choice. As for value gained by the customer, i.e., customer value, it can be defined as an excess of subjectively perceived customer benefits over subjectively perceived customer costs resulting from the product purchase and consumption. Such a definition of customer value corresponds to the notion of customer advantage in the theory of consumer choice and with added-value, introduced to the management literature by M. Porter.

With respect to the issues discussed above, the following attributes of customer value can be distinguished:

- Subjectivity: students values are not dependent solely on the service itself, but also on a students' individual needs to be satisfied by a new media and on a students' individual capability of covering the "costs" related to use new media in learning activities.
- Situational character: The benefits and costs related to the use of a new media are always conditional on the situation in which the new media are applied; depending on the situation, the same student may have a different perception of the benefits to be gained and the costs to be borne.
- Perceived value: This means that the assessment of student value comprises only the benefits and costs that are perceived (recognised) by the them, and not the benefits that were actually gained or the costs that were actually borne by him/her; the process of benefit and cost perception is connected not only with cognitive processes but also with emotional ones.

All the attributes of students values do not allow direct measuring of the category. Although students satisfaction can be used as a basic benchmark for customer value estimation, it should be remembered that satisfaction itself is not exclusively dependent on the value gained, but also the value expected by the student. Even more so, satisfaction appears only when the effects of using new media go beyond students' expectations of these results.

Another important attribute of students' values concerns its dynamic character, which means that the value changes over time and embraces the whole process of using new media. In its endeavour to provide a student with some value by new media, a universities ought to focus on the whole life cycle of educational services, including all costs and relevant benefits. Thus, students values represent complex set of benefits and costs perceived by both groups in the process of using new media in educational services. It is impossible to enumerate all the benefits and costs that are components of value for the students because their number and variety correspond to the number of students' needs, expectations,

and constraints. These needs, expectations, and constraints are subject to alterations because satisfaction of some needs opens the door to other, superior ones. Needs change or diversify, and new ones arise, thus necessitating the development of new media in higher education services that can meet students' changing needs and expectations and that can adapt to students' varying constraints.

Being aware of the fact that benefits and costs are the only determinants of the new media value perceived by the students, universities tend to arrange miscellaneous activities that are designed to teach students to appreciate the attributes of new media in higher education services. In practical terms, a universities can create and model students' needs and expectations with respect to the new media and, ultimately, may affect the assessment of the final value gained by students.

2. Value expected from new media by students on emerging markets of higher education

With reference to the views presented above, it was necessary to carry out studies that could allow researchers to identify the value that customers-students expect of new media applied in higher education institutions in emerging markets in Central and Eastern Europe.

In order to reach this goal, direct research was conducted on test groups of students representing five emerging markets in Europe. The study of students value from new media in education services in the Czech Republic, Hungary, Poland, Romania, and Slovakia was conducted by means of a survey of a group of 600 respondents in each country in 2014. The completion rate of the questionnaires was 82%, but after verification of the responses, 76% of the questionnaires were approved for further analysis. The choice of the countries was deliberate and based on similar organisational models of the higher education systems in the selected countries, which are representing emerging markets and all of them are member of the European Union.

Study results showed that the value expected by students of the new media in higher education services are similar or even identical across all CEE countries being studied. Differences emerge only in the significance of particular values for students from the various countries.

Among other values expected by students with respect to the provision of new media in higher education services, one can distinguish better quality of students services as a result of intense competition between universities and a wider range of accessible educational services. Individualisation of services presents another value that is highly expected and appreciated, especially by students in

the Czech Republic, Hungary and Poland. It is worth noting that a great number of Romanian students expect value of an economic character, particularly lower prices for added services at university and free-of-charge added educational services. The considerable importance of economic value with respect to new media in higher education services declared by Romanian students reveals that the level of wealth among Romanian society is still low. Additionally, compared to other countries, Romanian students more often point to the necessity of faster provision of services, which unveils some shortages and malfunctions of the transforming higher educational system in Romania.

Table 1. Value expected by students of new media in higher education in CEE countries

Factors	Czech Rep.	Hungary	Poland	Romania	Slovakia
Comprehensive information	56.4	60.1	51.2	69.6	47.6
Faster information access	38.6	21.3	32.9	30.4	31.3
Wider offer	29.2	30.8	32.2	25.5	28.7
Service individualisation	28.7	52.1	58.3	15.1	48.4
Better service quality	27.0	40.7	45.9	27.1	42.6
Free-of-charge services	17.0	8.2	8.1	35.7	11.4
Lower prices	16.3	11.7	9.3	46.2	10.8
Channel diversification	11.7	8.4	12.2	19.8	5.4
Faster service access	8.5	9.1	6.3	34.8	4.5
Others	3.7	2.6	1.8	4.3	2.6

3. Model of students' values of new media in higher education

As mentioned earlier in the text, customer-students value is a very complex and diverse category; as a result, it is difficult to identify all its aspects and elements. In order to better address the issue of value for the students, it is necessary to refer to models that describe the phenomenon. One of the most common model approaches to value found in literary sources is the consumption value model elaborated by J.N. Sheth, B.I. Newman, and B.L. Gross [1991, p. 157]. The authors of the model try to describe value from the perspective of the value declared, respected, or preferred by buyers (customer value). The model refers to the theory of consumer choice and points to five types of value contained in products offered on the market.

The Sheth–Newman–Gross consumption value model was developed in order to explain why the consumer makes choices on the market. It consists of several components and presents a range of specific measures defining factors that determine consumer behaviour. The model by Sheth–Newman–Gross focuses on estimating the consumption value, which explains why the consumer chooses between purchasing a certain product or withdrawing from it (using or not using

a definite item); why the consumer prefers one type of product over another one; and, finally, why the consumer chooses one particular brand and rejects another. The model can be applied to making choices on a full range of products (consumers of consumer durables, services, or industrial goods) [Sheth, Newman, Gross, 1991, p. 167].

The model by Sheth–Newman–Gross is based on three central principles:

- consumer choice is a function of little amount of consumer values;
- the specific value of consumption differentiates the effort put into each particular situation; and
- the values that constitute the core of the model are functional, social, emotional, cognitive, and conditional values [Smyczek, Sowa, 2005, p. 138].

The functional value of a consumer choice is perceived as the functional, utilitarian, or psychological utility obtained through the attributes of the choice (e.g., positive or negative attributes). The functional value is strictly related to the theory of rationality, which is expressed in the popular phrase of “the man acting rationally”. The center of the functional value is occupied by such attributes as durability, reliability, and price. This can be exemplified by a house purchase decision, which should be based on the price and the localisation of the house.

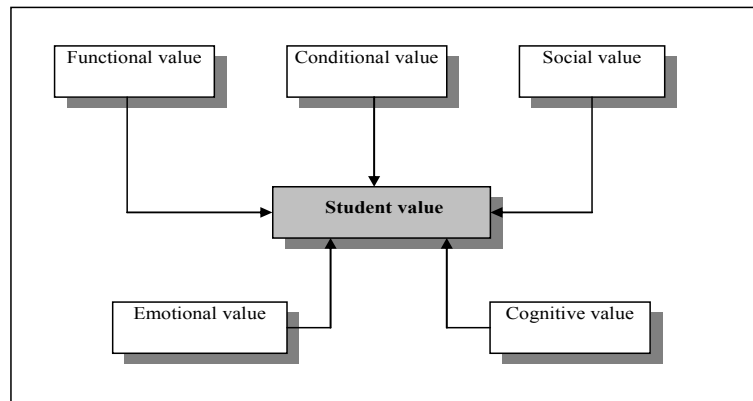
The social value of a consumer choice occurs as a consequence of the relationship that exists between one or more specific social groups and a consumer choice. Consumer choice produces the social value through correspondence with positive or negative stereotypes of demographic, socio-economic, and cultural-ethnic groups (including benchmark groups). Thus, choices are made both with respect to products of daily use (e.g., bicycles, shoes) and “socially engaged” goods (e.g. presents, products used for entertainment).

The emotional value of a choice reveals the utility of some goods with regard to their ability to stimulate consumer emotions and feelings. Consumer choice provides the consumer with emotional values when it is related to some specific feelings and when it evokes or sustains these feelings. Products often have some emotional connotations (e.g., excitement while watching one’s favourite sports team or a thrill experienced while driving a new car).

The cognitive value of a choice displays the utility that is connected with the ability to satisfy curiosity or provide some novelty and/or satisfaction derived from the need for knowledge. A cognitive value is provided particularly by new purchases and experiences, although even a slight “change in arrangement” (e.g., change in ice cream flavour) can provide the consumer with cognitive value.

The conditional value of consumer choice shows that the latter is the result of a definite situation or circumstance surrounding the consumer. Consequently, the purchase of some products is related to some specific period or event (e.g., a birthday present). Some goods generate a certain atmosphere or provide local benefits (e.g., a suntan lotion); some are connected with a once-in-a-lifetime opportunity (e.g., purchase of the first car); and, finally, some are used only in emergency situations (e.g., a visit to the dentist on Sunday evening).

Figure 1. Model of five customer-student values



Source: Based from [Sheth, Newman, Gross, 1991, p. 162].

The Sheth–Neman–Gross model is attractive not only due to its composition but also, above all, due to its manner of measuring [Sheth, Newman, Gross, 1991, p. 159] the five values in different consumer choice situations. Thus, the model presents, in a complex way, the types of value perceived by customers, whereby it is possible to demonstrate different kinds of value and to better explain the value expected by consumers. That is the reason the direct research conducted on higher education markets utilised the values (functional, social, emotional, cognitive, and conditional value) indicated by Sheth–Newman–Gross in their model of consumption value.

The factors describing value for students of new media in higher education in Central and Eastern Europe and model construction were identified by means of exploratory factor analysis. First, an attempt was made to determine a set of variables that separately describe value defined by students from the countries in the study, i.e., Czech Republic, Hungary, Poland, Romania, and Slovakia. The Likert scale responses for fifteen variables were used to identify variables that clustered together, which define the different kinds of value expected in the new media in higher education. During the next stage of the factor analysis proce-

ture, the variables used in the study were checked in terms of the existence of definite relationships among them. It is worth adding that if the correlations between the variables are low, they are rather unlikely to form strong and easy-to-interpret common factors.

In order to demonstrate that the choice of the factor analysis model as a method of data analysis was correct, the Kaiser–Meyer–Olkin [Gatnar, Walesiak, 2004] index was used. The KMO for the fifteen analyzed variables equaled 0.803, which was relatively high. This result, however, did not guarantee the distinction of some definite factors (or a factor). Therefore, it was necessary to calculate the adequacy of the selection of each separate variable by referring to the MSA_h index, which allows exclusion of some variables before the analysis. Low MSA_h values suggest that h variable correlations cannot be explained through other variables and, therefore, should be excluded from further research [Górniak, 2000, p. 150].

Measures of sampling adequacy indicated that the variables, (5) fashion as a social value for the students, (6) modernity as an emotional value, and (9) integration as a social value for the students of new media in higher education, have MSA_h index below 0.5, which excluded them from the analysis. Consequently, the rest of the analysis comprised twelve variables that achieved very high KMO (0.887) and MSA_h (over 0.8) indexes.

In order to determine the number of factors to be used in the remaining analysis, the method of scree plot was employed. This method is based on a scree plot where eigenvalues for definite factors are marked. According to the scree criterion, it is vital to preserve factors that form “the slope” and to ignore the ones that build “the scree”, i.e., whose combined eigenvalues form almost a horizontal line. The analysis of variables defining the values for students show that the “scree” phenomenon appears at the third or fourth factor, which makes the choice of factors for further analysis problematic. In the literature on the subject, scientific opinions are divided: some researchers recommend keeping all factors in the “slope”, including the one that opens “the scree”; others advise that this factor be ignored [Lehmann, Gupta, Steckel, 1998, p. 610].

Determination of the final number of factors to be used in the further analysis was performed through calculation of eigenvalues and the variance percentage explaining other components. The eigenvalue criterion marks the lower limit for the number of factors that are common in the correlation matrix for the population, which means that the number of factors is always equal to or higher than the number defined by the criterion. According to the eigenvalue criterion requiring an explanation percent higher than single digits, the remaining analysis

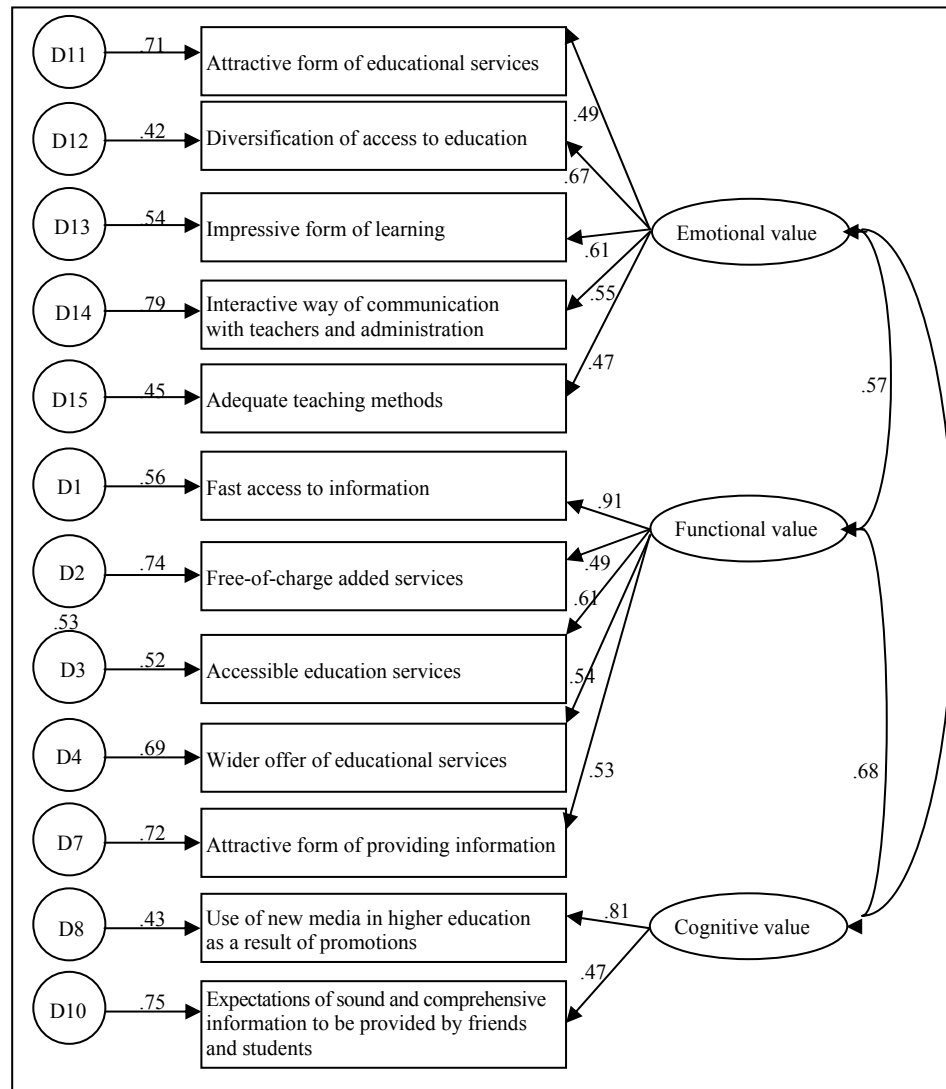
should include factors that explain 59.82 percent of the variance capacity common for all variables. Application of the principal component method with quartimax rotation made it possible to determine factor loads for particular variables.

Using the analysis, it was possible to establish three factors that determine the values for students of new media in higher education services in the Central and Eastern Europe:

1. The first factor is described by variables that give information about the circumstances that contribute to (or better the condition of) the use new media in higher education services by students, namely: (11) attractiveness form of educational services, (12) diversification of access to educational services channels, (13) impressive form of learning, and (14) interactive way of communication with teachers and administration staff, as well as (15) teaching methods adequate to students skills, referred to as emotional values for students.
2. The second factor reveals variables that provide information on students' expectations of new media in higher education services: (1) fast access to information, (2) free-of charge added educational services, (3) accessible educational services, and (4) a wider offer of educational services, as well as (7) attractive form of provided knowledge and information, a factor called the functional value for students.
3. The third factor is described by variables that result from willingness to satisfy curiosity or to obtain some knowledge. These are (8) the use of definite new media in higher education services under the influence of some promotional activities and (10) expectations of sound and comprehensive information to be provided by a friends or other students, called the cognitive value for students.

All things considered, one can venture a statement that student value regarding the new media applying to emerging markets of higher education services is affected by three factors, i.e., emotional, functional, and cognitive ones (Figure 2). Because of the specific character of the new media as well as engagement of young generation in new technologies itself, conditional value does not play a major role in students' choices. Also social value, as indicated by research results, is not of great importance in this market.

Figure 2. Model of students value of new media in higher education on emerging markets



$\chi^2 = 273.84$; $df = 71$; level of significance $\alpha = 0.000$; $\chi^2 / df = 3.86$; $GFI = 0.84$; $AGFI = 0.80$; $NFI = 0.81$; $CFI = 0.85$; $RMSEA = 0.031$; Hoelter $0.05 = 298$.

Conclusions

Bearing in mind the analysis presented above, it can be concluded that students in the emerging markets of higher education demonstrate very positive attitudes towards new media application in educational services. However, their expectations focus mainly on communication and service provision; on value connected

with individualisation of student services; and on economic factors. Inclusion of this understanding of value in the strategy of universities will allow for assessment of satisfaction and estimation of students value in the European emerging markets of higher education.

The elaborated model provides a complex description of students values expected from higher education institutions introducing new media with respect to cognitive theories. The model offers a wide range of applications; and, in the first place, it should help researchers and market participants comprehend the complex elements of students' values and consider students' behaviour during consumption of educational services from another perspective (different from the one assumed in the subject literature). Moreover, the model takes into consideration that application of new media in higher education market is a vital factor determining students' behaviour.

Thus, a conclusion can be drawn that the identified model of value for students serves not only scientific, but, above all, practical functions (descriptive-explanatory). The model allows simple identification and explanation of market gaps between students' expectations of the new media in higher education and representatives of universities responsible for provision of values.

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Students' media literacy – the case of students of the University of Economics in Katowice

Anna Adamus-Matuszyńska

Introduction

The social environment and the time when a message is made may influence its meaning and can often provide insight into its values, and credibility. Today, we live in the modern media¹ world that has a great impact on making and meaning of messages. At present a media producer can be any person. The only what a producer needs is an Internet access. The media producers' package messages in ways that are often visually stunning and highly appealing to a target audience. This is why, that "any person" can have a great impact on how the other person thinks, understands, reacts and makes decisions. Because of his/her great effect, the media message producer has excessive power. In addition, those who are under media impact, which in fact refers to the whole society, require media education even though they are not aware of it.

Contemporary media is one of the most important sources of information. Nonetheless media education is still important because without meaningful opportunities to learn and apply the media meta-language for discussing texts, today's media messages receivers cannot be expected to competently read the media messages. As researchers stress there is a need to promote literacy, especially "scientific literacy" among young people [Jarman, McClune, 2010]. Media literacy which is generally defined as "the ability to understand, analyse, evaluate and create media messages in a wide variety of forms – from print to video, to the Internet". It builds "an understanding of the role of media in society as well as essential skills of inquiry and self-expression necessary for citizens of a democracy" [Thoman, Jolls, 2003, p. 21]. As a consequence of media increases, the knowledge how to take advantage of it seems to be fundamental for the cognitive development of young people. One of the groups especially exposed to the influence of media are students, because the students regularly search for information and use Internet messages as an important source of facts. Using the digital media students learn how to question the intentions and the contexts of

¹ The term "modern media" does not yet have a clear definition yet. In the article the modern media term represents a broad spectrum of new forms of public and universal communication through modern technology. This term concern therefore will be both digital media and all possibilities offered by the internet and communication technologies.

the media they consume. In this “modern media age” the screen has replaced the book and has become the dominant medium of communication. At the same time an image is displacing writing and moving into the centre of communication.

In this context, development of media competences should occupy a special place in education, especially at university. That’s what media literacy is capable – at least partially – to equip students with the skills expected today by employers and society [Iwanicka, 2013]. The media competence is the harmonious composition of knowledge, understanding, valuation and the efficient use of media [Strykowski, 2004, 33]. Strykowski distinguishes two categories of competence [Strykowski, 2004, p. 33]: intellectual and cultural that include the preparation of people for a conscious and critical reception of media messages, and technical and practical that include the preparation for efficient use media as the tools of intellectual work, communication and learning.

Taking into account the above, the research questions of the presented survey were: To what extent today’s digital media age influences on students’ knowledge, values and attitudes towards crucial issues? Are university students aware of the impact of Internet and new media on knowledge, attitudes and values?

1. Theoretical assumptions – revolution in literacy

At present one may observe, on the one hand, the broad move from the centuries-long dominance of writing to the new dominance of the image, and, on the other hand, the move from the dominance of the medium of the book to the dominance of the medium of the screen. Such an approach shows that we are witnesses of revolution in literacy. Some time ago reading and writing were the abilities that allowed having an access to knowledge. Today one wanting to be accepted by others and well informed needs to use languages, numbers, images, and, last but not least, technology. The question might be raised whether users of media are aware of all those desirable abilities.

As it was surveyed, most respondents (80%) stressed that media has influence on society as a whole. But at the same time, 12% of respondents perceived its strong impact on their personal lives [Silverblatt et al., 2014, p. 6]. The data reveals that knowledge on media impact and media literacy is not perfect enough and not successfully caught.

Taking into account the media impact on the youth one may stress that media makes a revolution in the uses and effects of literacy. A socially competent person in the era of digital media is somebody who is effective in social interaction [Rose-Krasnor, 1997, p. 111].

Competence as a mental functional unit includes four major components [Miašo, 2013]:

- Component of conditioning the creation of cognitive environment representation (knowledge, conceptual systems).
- Evaluative component (criteria of evaluation, values).
- Programming component (tasks, issues, themes, goals, ideals).
- Metacognitive component (critical, reflective and creative thinking)

In conclusion one may emphasise that being a competent person today means being able to get the knowledge through the ability to choose proper criteria for evaluation, to choose appropriate themes and tasks, to be able to think in a critical and reflective way and, what must be added, to make suitable to tasks, reflection and goals choices when using technology and media. Revolution in literacy means the ability to use media and technology understanding at the same time the complex context when a message is created.

1.1. Theoretical assumptions – revolution in organising of message

Because today there is a dominance of an image, screen and picture the organisation of writing as well as a speech, which is governed by the logic of time, and by the logic of sequence of its elements in time, is not currently right. The organisation of the image is now governed by the logic of space, and by the logic of simultaneity of its visual/depicted elements in spatially organised arrangements. Concluding it simply line of reasoning. When speaking or writing I have to say one thing after another, one sound after another, one word after another, one clause after another, so that inevitably one thing is first, and another thing is second, and one thing will have to be last. When using images, pictures, or a screen, as medium of communication and source of knowledge a person must organise all element visible on the screen to the one logical whole. The role of an individual, his/her perception, wisdom, background, media literacy, are dominant. This is what may be defined as revolution in organising a message. A message is built depending on media producer's background.

1.2. Theoretical assumptions – revolution in meanings

While the reading path in the image is relatively open – which means that a person is able to make his/her own interpretation – the image itself and its elements are filled with meaning. Media do not reflect the reality. It presents a carefully crafted construction that is the result of many determining factors [Thoman, 1993; Jolls, Wilson, 2014, 71]. E. Thoman articulated five key theses about media messages:

1. All media messages are “constructed”.
2. Media messages are constructing using a creative language with its own rules.
3. Different people experience the same media message differently.
4. Media are primarily businesses driven by a profit motive.
5. Media have embedded values and points of view [Thoman 1993].

Therefore, a message has the meaning attributed to it by the media producer. The recipient is in a sense sentenced to the content included in the message. Reading a message means understanding the context of its creation. That one may call as revolution in meanings.

2. Estimation of media uses abilities

2.1. Research methods

To measure media literacy is a great challenge [Arke, Primack, 2009, p. 54]. However, while the importance of the media literacy field is growing, there is not enough number of researches, which would clarify problems, and answer the questions raised.

To understand the Polish students’ media literacy quantity and quality methods were adopted. The questionnaire (auditorium survey) consisted of two kinds of questions: the first group there contained semi-closed and closed questions, and the second group contained open question which purpose was to clarify the meaning of controversial in Poland term of “gender”.

Referring to the Miąso’s list of four main components of the media competence the questionnaire tried to recognise their evaluation made by students.

2.2. Research results

One of the most important issues when analysing media literacy is a question about skills that are necessary to be practiced when using the digital media. This is why students were questioned about their individual assessment of such abilities. The list of skills was prepared referring to the literature.

Table 1. Important skills when using mass media

Criteria	Definitely yes %	Yes %	No %	I do not know %
1	2	3	4	5
Critical assessment of media messages	25.6	64.1	10.2	0
Sensible use of media, what means to analyse its content	43.5	56.4	0	0

Table 1 cont.

1	2	3	4	5
Awareness of threats coming from mass quantity of information and large possibility of manipulation	53.8	41	5.1	0
Skill to choose and classify information	43.5	51.2	5.1	0
Skill to separate facts from interpretation	43.5	43.5	7.6	5.1

As the results of surveyed students reveal they understand the importance of skills in the use of modern media. Only 10% believe that the critical assessment of media content is not essential skills while using the Internet. Therefore, it can be concluded that students have a high awareness of the role and importance of the media.

Table 2. Estimation of media competency

Assessment of media competency	%
Very high	6.1
High	50.87
Average	38.6
Very low	3.5
Rather low	0
I cannot estimate	0.9

As the above data shows the surveyed students feel very self-confident about their abilities to use media. Only few of them (10%) mentioned that their media competency is rather low. Considering two data: high media awareness and high estimation of media competency one may assume that students are well prepared to use the modern media and there should not be a great risk in taking advantage of the Internet and social media in studying, learning or communicating.

Table 3. To what extent the digital media shapes students' attitudes and values

Attitude or value	Very highly %	Highly %	Moderately %	Small degree %	Very small degree %	I do not know %
1	2	3	4	5	6	7
Honesty	4.3	7.9	21.9	43.8	21.9	0
Credibility	5.2	18.4	19.3	30.7	26.3	0
Responsibility	7.0	11.4	33.3	33.3	14.9	0
Perseverance	4.3	15.8	27.2	30.7	14.0	7.9
Self esteem	9.6	22.8	19.3	25.4	20.1	2.6
Respect for others	6.1	18.4	25.4	33.3	14.9	17.5
Cognitive curiosity	25.4	44.7	18.4	8.7	1.7	0
Creativity	15.8	29.8	15.8	21.9	7.9	0.9

Table 3 cont.

1	2	3	4	5	6	7
Entrepreneurship	11.4	34.2	22.8	17.5	10.5	3.5
Personal culture	1.7	16.6	29.8	33.3	17.5	0.9
Willingness to participate in culture	5.2	28.9	38.6	19.2	3.5	4.3
Taking the initiative	2.6	39	33.3	24.5	4.3	0.9
Teamwork	2.6	16.6	35.9	30.7	11.4	2.6
Citizenship	2.6	26.3	37.7	23.6	7.0	0.9
Respect for the traditions and culture of their own people	7.0	29	40.3	17.5	7.9	1.7
Respect for the traditions and cultures of other nations	7.0	32.4	33.3	15.7	11.4	0
Preventing discrimination	8.7	27.1	25.4	15.7	16.6	5.2

As it was stressed earlier in the article the modern media have an influence on values, ideas, attitudes and the perception of facts. This is why students were asked in what way digital media have an influence on some of these crucial elements of the social life. The answers to that question are very spread out. However, it should be stressed that students are convinced that modern media in medium shape their values and attitudes.

The second part of the questionnaire contained open-ended question on the definition of “gender”. The term gender was chosen for two reasons. Firstly, gender studies can be studied in Poland from few years, so young people have the opportunity to familiarise themselves with the direction of such social research. Secondly, simultaneously there is a discussion in Poland concerning this issue, which has a political background. A public debate on gender issue contributes on the one hand to popularisation of the subject, but on the other hand, it determines many of the stereotypes and prejudices. In this public discussion both traditional and social media play significant roles. As researchers stress gender is crucial to understanding how the world works and how societies could be organized differently [Holmes, 2007, p. 171].

As it happens in social sciences there are many definition of gender. Generally gender refers to social, cultural, and psychological traits linked to males and females through particular social contexts. Sex is an ascribed status because a person is born with it, but gender is an achieved status because it must be learned [Wharton, 2012, p. 4].

The definitions of gender pointed out by the surveyed students were divided into two groups: distant from and close to sociological meaning. The first group consisted of the following explanations:

- No borders between females and males.
- Something ridiculous.
- Freedom to choose whom you are.
- Sex does not have importance in children development.
- It is a new sex (neither man, nor woman).
- It is the lack of personal identity due to challenging educational environment.
- A stupid idea promoted by stupid people.

Definition of “gender” which were close to the sociological definition were as follows:

- Respect for difference.
- Awareness of sex and mental identity.
- Gender equality.
- The right to choose his/her own path.
- Defining role of his/her in a society.
- Social differences arising from social roles.

As one may notice definitions far from the sociological meanings are stereotyped and misunderstood. The analysis of public debate on gender in Poland reveals that those descriptions come from that argument because they contain the current wording, often uttered by politicians in the political debate. The number of definitions that were described as “far from sociological meaning” was twice.

Conclusions

Common and easy access to information does not guarantee the proper level of knowledge. Common and easy access to information does not break stereotypes and prejudices. Common and easy access to information makes our knowledge simplified and rather general than deepened. These assertions are obvious.

The ability to use digital media is a necessity today. The research shows that the development of new technologies and better access to sources of information as well as reliable knowledge is not accompanied by the development of the ability to use these modern benefits. The use of media facilitates personal development; nevertheless their mere existence is the foundation, which must be supported by media education.

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The role of education in the information society. Developing information literacy among students and the new methods of teaching

Rafał Zdyb

Introduction

For almost half of a century we have been observing progressive digitization of our environment. At first, computers' invention and then – the development of the Internet in the 90s – have enabled storage and processing of a huge amount of information. Information-communication technology (ICT) has influenced the way people work, communicate, live-in general within so called *information society*. Although that unprecedented progress regarding to ICTs, human capability in majority remains the same. Nevertheless, the vast amount of information circulating in the social space requires specific abilities from human. To be able to work, learn, or just – be in contact with other people, individuals today are obliged to learn how effectively use this new technologies, or at least – how to find a needed information using it.

Yet besides enormous quantity of information circulating nowadays, it is the quality of it that seems to be essential. Relevant knowledge, desirable experience (and suitable know-how) is what it counts today in the labour market [cf. Kocór, Strzebońska, Dawid-Sawicka, 2015, pp. 47-52]. However, before particular information becomes valuable knowledge, it needs to be accurately selected, evaluated and synthesized within former cognitive structures of the person using the information. Only then, the information could truly become *revolutionary wealth* according to knowledge-based economy [Toffler, 2007]. However, how the individuals might be able to recognize what kind of information are so precious, or which one – are not credible or even potentially harmful – that seems to be the biggest contemporary challenge.

In this context, question about the role of education system seems to be particularly important. First of all, we should certainly ask whether it is possible that anyone is able to prepare for this. Secondly, if we answer affirmatively, we should ask how the education system could help students in this preparation. One thing seems to be obvious. So called *digital literacy* in using new technologies is not sufficient. Using ICT wisely require appropriate skills, attitude and knowledge as well.

1. Commoditization of higher education

Nowadays, dynamically changing labour markets cause that the qualifications of graduates often remain not sufficient towards employers' requirements. In result, there are two dissatisfied sides. Post graduate students with problems in finding their first job and the employers who are falling into trouble because they cannot find appropriately qualified candidates. Such situation forces governments to take up some relevant actions which aim is of course to solve the problem of unemployment. Unfortunately or not, according to them, quite often it is the matter of schools, universities and teachers, which allegedly fail in producing the "right" products for industry [Clark, 2000]. Because people (the electorate finally) are afraid about their future jobs, universities are obliged by governments to support them with the "proper" education, which will guarantee employment in the future. But the future is unknown, old trades are vanishing and the new professions are emerging. However, instead of preparing students for *uncertainty*, governments require that the universities become in fact "dreams sellers" telling young people that they will teach them a trade – as it was feasible in the industrial age.

This leads to common commoditization of higher education. The education is being sold and people are just buying it. For the more certain future than it seems is coming. This market-oriented logic is nowadays widely spread within the educational system. As J. Sanguinetti [2000]) remarks, even such concept like *lifelong learning* in some documents is constructed as a "commodity" or a "product". Universities have been forced to comply with market rules as well. However, what seems to be spectacularly significant, is that the temporary demand on some specific "offer" is determined rather by a current atmosphere in media or another "trend" currently present in a common thinking, than by an *invisible hand of market* or as a product of some specialised analysis of market requirements. Because of that universities are getting losing their authority or even agency, becoming a *factory* where the education is "being sold" and subsequent graduate students are "being *produced*", while the numbers always must add up, because the number of students directly influences its budgets. This of course applies to not only private schools, but the public sector as well, since the national funding system is so much linked to the popularity of a particular studies university has to offer.

However, the price people are paying for such "product" might be double. Double for them and double for the society. First of all, sooner or later, they will probably realize that they were "wasting their time" (not only their money) during 'these whole years spent on these useless studies' and sometimes – they will even be right in this case. Secondly, if it really turns out to be true, society will 'pay' for this misunderstanding as well, because after all – there will be still new

jobs and no people being able to take up such work. This in turn force employers to search for human resources abroad or differentiate salaries even more, because there will be lack of specialists in a particular fields. Each cases might generate losses for the society. Moreover, the commoditization of education has a bad influence for human creativity, which is harmful not only for the individuals themselves, but the whole culture of innovation, for which innovations and creative operations remain essential, remarks F. Trompenaars [2010, p. 15]. Thus, this widely applied recently business model, however would it be profitable, might not be adequate solution for the education system.

2. Educational model towards new challenges of the Digital Age

The main aim of the education system still remains to prepare people for their future occupations or the future roles they will play within their lives. However, something has changed. Until now, the education system, more or less, was based on teaching some universal skills over the years and the transfer of a specific and quite stable knowledge over generations. Now, when the people's digital environment is changing so fast, the specific knowledge or the currently-worth skills tomorrow might be out-of-date or just useless. That is why societies should move away from the shaped still in the Industrial Age model of pedagogy which assumes linear, *ex cathedra*, one-direction transmission of the immutable and steady knowledge [cf. Tapscott, Williams 2011, pp. 152-153]. Because knowledge nowadays is just not "a commodity that can be deposited into student brains by teachers to be withdrawn at will for future use", as remarks B.A. McDonough [2014, p. 30].

Nowadays, educational process "cannot be conveyed as content. It is, rather, a path or a journey of intellectual growth and understanding. Learners and teachers need to negotiate the journey together and for themselves", notices J. Elmborg [2006, p. 198]. According to many educationalists, and in particular M. Eisenberg, new educational model should now be focused on developing essential skills instead of transferring specific knowledge [2008]. The most important seems to be – and not only for the librarians already – so called *information literacy*, which assumes a set of adequate skills for the Digital Age.

However, the *information literacy* should be distinguished from the *digital literacy*. The difference is quite similar to the problem with the *digital divide*. As E. Hargittai argues, „merely offering people a network-connected machine will not ensure that they can use the medium to meet their needs because they may not be able to maximally take advantage of all that the Web has to offer" [2012, p. 12]. The same is with the *digital* and the *information* literacy. Digital literacy is at most some kind of a fluency in using some specific device, barely under-

standing the whole social context of content available *via* such object. Information literate person is not only a person who is able to achieve some specific information within the whole maze of the digital, but is also – able to critically use and understand it.

In spite of the difference described above, we are very often witnesses of the situation that people who work within education system misunderstand these two, “postindustrial” types of literacy. First of all, it is probably the problem that they are afraid about new technologies and their “digital” skills. They under appreciate their own abilities to learn something new, and they see how much “better” at using ICTs are their own students. Secondly, they equate *digital natives* with the *information literate* people. However, in order to be *information literate* it is not enough to “be born in the late 1990s” or to be fluent in using several mobile devices. It probably helps in becoming information literate person – if it only does not make this even more difficult. Since some studies have already shown that the younger generations have the other kind of problems with the ICTs. The youngest users of the Internet have for instance difficulties in distinguishing commercial from non-commercial content or opinions from the facts [Rozkosz et al., 2014, pp. 263-273].

This clearly shows us that the *information literacy* concept is something more than just a turning students into mere information-processing machines [cf. Whitworth, McIndoe, Whitworth, 2011, p. 41], and that the problem of developing among students such essential skills is much bigger than it seems to be. Simultaneously, we cannot underestimate the need of such competencies nowadays among students, which enable them lifelong learning, which now seems to be crucial, empowering individuals and allowing them as a citizens to participate more fully in social, economic and democratic processes, emphasizes T. Clark [2000, p. 5].

3. Developing information literacy among students

Before we concentrate our attention on schools and universities, what seems to be worth elaborating here, is the role of the whole student’s environment socializing them, including ‘teaching’ them how to deal with the information surrounding them in almost every second, every day. According to E.A. Rozkosz et al. [2014, pp. 263-273], we should always perceive competencies developed in this way, as an outcome of interactions among various environments: home, school, peer group, and selected Internet communities. This leads us to the conclusion that in this process more people are engaged and other – maybe even non-human – agents, responsible for the final effect, not only teachers and stu-

dents themselves. Interactivity of the Internet and the whole human digital ecosystem influence for all the time students using ICTs, and not only during using it for the educational purposes. This interaction makes students more or less susceptible to this influence as well as more or less capable of using it. Since the fact already well known is that the more time spending using ICTs makes users more skillful within it. However, lack of interest from the parents' side in early years of using ICTs by their child, bad habits or influence from the rest of the student's environment, or just no access to some new technologies because of someone's financial situation, cause that the level of information literacy from the beginning strongly differentiates students and their skills.

Although, many educationalists, librarians and teachers still make unceasing attempts to teach their students be more and more information literate users of ICTs. Probably the oldest and most widely known model of developing information literacy (IL) is the Big Six Skills developed by Eisenberg [2008, p. 40]. The model emphasizes significance of particular stages in achieving demanded information. However, McDonough notices that adherents of the newer approaches agree that the traditional concepts of IL present an overly-simplistic model of the research process that is out of synch with the reality; that research is a non-sequential, iterative, and messy process [2014, p. 9]. Also according to Elmborg, IL should focus less on information transfer and more on developing critical consciousness in students, so that they learn to take control of their lives and their own learning to become active agents, asking and answering questions that matter to them and to the world around them [2006, pp. 192-193]. Thus, learning becomes essentially humanistic process, central to both – teaching and learning, and the information can then be redefined as the raw material students use to solve their problems, rather than a something “out there” to be accessed efficiently [Elmborg, 2006, p. 198].

Regarding to critical information literacy (CIL) concept, students themselves are becoming more responsible for the whole process of acquiring information. Adoption of such approach leads to many challenges on both sides. First of all, teachers should avoid imposing value judgments on types of information sources, delivering them only “big picture”, said McDonough [cf. Bell, 2011]. Secondly, they should not limit sources and instead make use of the sources students are familiar with (as a bridge from their personal lives into academia). And finally, they should teach about information in terms of its purposes and uses, teaching information as a dialog [McDonough, 2014, pp. 99-102]. In this relation the Digital Natives should become more critical users of accessible information. They should be aware about not always credible sources of information and they should interact with each other, teamwork– in order to develop *dialogic*

literacy, which is— according to J. Hedberg and O. Brudvik – the ability to engage productively in discourse whose purpose is to generate new knowledge and understanding. It is possible, especially within so symbolic “place” as the Internet, where through interactions, learners must decode and construct meaningful artifacts to represent their understanding [2008, p. 139].

This approach determines of course to apply a number of new methods of teaching using new technologies. So called Digital Immigrants [Prensky, 2001, p. 2] should adopt the new media to the process of teaching utilizing possibilities it creates. Interactive dashboards, portable devices and mass of other potential sources of information should be analyzed and included within the learning process – both by the teachers and students. Both should be well conscious how ICT impact their lives, their computer-mediated relations with other people and their imagination about the whole “outer” world. Apart from this, according to I. Huvila, as a part of the information literacy we should also perceive the information creation. As the students are not only – or at least will not be in a soonest future – information receivers, they should also learn how to create information. That is why teacher should also emphasize how important is to create comprehensible and findable information within the digital environment [Huvila, 2011].

Encouraging students to using new media for the educational purposes could also improve their engagement into the learning process what is already proved by many scientists. As D. Tapscott argues [Tapscott , Williams, 2011, p. 156] such involving experience within the virtual worlds like for instance *Second Life*, could not only help to improve students’ teamwork skills and other social and interpersonal skills, but also help them *to understand* what they really learn about. Simultaneously, for them it seems to be quite safe laboratory, where they readily train these, notices A. Brosh [2013, pp. 179-180].

Conclusions

Generation gap regarding digital literacy undoubtedly might cause some problems in the education system. From one side, so called Digital Natives could not be conscious about risks connected with the ICTs and they might be not be able to use them as a valuable information sources. From the other side so called Digital Immigrants who are afraid to use the ICTs because they think they do not have adequate skills, might not use the multitude of opportunities this technology creates for the education purposes. Nevertheless, the most important thing nowadays seems to be that everyone should be aware that the lifelong learning concerns everyone and not as a commodity that someone can sell and someone can buy, but as a some kind of attitude, a habit of mind.

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Online marketing communication of higher education institutions and consumers “hate” phenomenon

Agnieszka Put & Marta Grybś

Introduction

Corry [2012, p. 79] says that the Internet and social media “have not only changed advertising and the way businesses communicate with customers, but they have also changed the way we communicate with each other in our daily lives. This is a pivotal juncture in society as more people gravitate towards the Internet for every aspect of their lives. It is time to effectively communicate our businesses, services and products to consumers where they are spending a majority of their time – online”. Today, almost all companies and institutions have their own websites and carry the same all sorts of promotional activities on the Internet. More and more organisations use Internet tools to communicate with their current and potential consumers. Such actions also carry universities around the world¹.

In the marketing strategies of many universities there can be observed a usage of popular online branding tool as well as rapidly growing email marketing engagement. Another developing trend is social media along with viral and mobile marketing. These trends are based on engagement of new technologies in order to reach target group. Often online marketing activities are faced with a wave of criticism, in which many of comments are unfounded. This phenomenon is referred to as “hate” phenomenon on the Internet.

The purpose of this review is to explore the nature of online marketing communication of higher education institutions and consumers “hate” phenomenon in an international context. Important aspect is an organisational and international culture. The authors are aware of identify gaps in the research literature and make recommendations for further research in this field.

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1. Online marketing communication

Marketing is one of the areas which are the most affected by digital hate phenomenon due to the possibilities offered by online communications [Krishnamurthy, Singh, 2005, pp. 605-10]. Efficient and effective communication process within the organisation has an impact on its functioning and the way in which it is perceived by the environment. A particularly important role in the process of internal and external communication is played by marketing communication. Marketing communication task is to build and maintain a competitive advantage on the market. It engages coordination of promotional and other marketing activities in order to effectively communicate with customers. It is underlined by a basic idea of receiving and transmitting certain content or information [Pilarczyk, 2010, p. 120]. In a competitive and changing environment, there is an increasing importance of careful selection of channels used for communication between the company and its target audience, in order to create a convincing and precise targeted communication [Kotler, 2005, p. 851]. Appropriately implemented marketing communication strategy allows creating, individualising and strengthening relationships with customers, increase interactivity and finally gaining extensive knowledge about stakeholders. These factors – used properly – can be the basis for increasing the effectiveness of marketing activities and deliberately building competitive advantage [Budzanowska-Drzewiecka, Lipińska, 2012, p. 13].

The quality and form of marketing communications used by firms are affected by the quick development of new technologies and the Internet along with widening range of available tools of communication. The Internet will broaden the traditional market space in the dimensions of information and communication, distribution and transactions [Szapiro, Ciemniak, 2012, p. 13]. Extending the traditional market space as a result of the impact of the Internet takes place through the creation of new areas in which operators may, inter alia: communicate, build relationships, exchange information, formulate opinions, which explains the increasing interest in the field of online marketing in comparison to other areas of business management [Budzanowska-Drzewiecka, Lipińska, 2012, p. 13]. Modern companies more and more often use the Internet first of all as an additional channel of communication, and secondly as a tool to increase the effectiveness of interactive communication or promotional activities, thirdly – for commercial purposes [Frąckiewicz, 2006]. Online marketing communication has developed to be an important part of a company's marketing mix (price, place, promotion and product). Moreover, it can refer to the organisation's strategy used to reach their target market through various types of communication.

Among the communication tools used within online marketing there can be indicated: website, e-mail marketing (newsletter and advertising in the form of e-mail), online advertising (display and video), search engine marketing (SEM), viral marketing and e-PR. Moreover, social media is said to be a priority in conducting interactive dialogue with the stakeholders [Zbrzyzny, 2011, p. 52]. Social media are defined as a “new form of media which enables the transfer of text, photos, audio, video, and information in general increasing fluidity among Internet users. Social media has relevance not only for regular Internet users, but business as well” [What is Social Media? 2014]. There are many features of social media, e.g.: creation of content by Internet users (User Generated Content), availability of resources for everyone – free access to create and receive content, supporting bi-directional communication for dialogue on the line: the sender-recipient, publication of the information what is the beginning of a media trial, lack of complete control over the message by a sender after publication, the possibility of creating information by any Internet user, using message on any scale and everlasting modification of the original information, spread of content through social interaction, durability of information, participants interaction who have access to their content and the content of other contributors at any time (they have also the possibility to refer not only to the basic content, but also to the comments of other users), the delay between content and publication is reduced to a minimum (done without delay) shaping the final value of information by members of a social group centred around the theme [Fabjaniak-Czerniak, 2012; Kaznowski, 2010].

The most popular social media are as follows: Instagram, Google Plus, Twitter, YouTube and Facebook which is largest social network in the world. These tools are increasingly used in online marketing communication by companies and various organisations. When it comes to tools used by Universities, there is no doubt that the website is now the primary source of information and it promotes the university and its educational offer. However, many universities use in the communication process also social media marketing (more or less consciously). This is due to the fact that social networking sites such as Facebook or You Tube are “one of the latest examples of communications technologies that have been widely-adopted by students and, consequently, have the potential to become a valuable resource to support their educational communications” [Roblyer et al., 2010, p. 134] and collaborations with their universities. Moreover, studies on the preferences of students and faculty in connection to usage of the Internet and social media showed that engaging online promotional tools by Universities is legitimate [Moran, Seaman, Tinti-Kane, 2011, p. 3]. Other studies show that though faculty members are more likely to use more traditional technologies,

“students are much more likely than faculty to use Facebook and are significantly more open to the possibility of using Facebook and similar technologies to support classroom work” [Roblyer et al., 2010, pp. 134-140]. Social media are therefore, “one of the most dynamic communication channels which have lately developed in the whole world, including Poland. The establishment of social media is an effect of changing societies’ needs and expectations [...]. However throughout its specific characteristic like enabling constant dialog with the consumer, social media are especially vulnerable to crisis situation occurrence” [Fabjaniak-Czerniak, 2012, p. 193]. One of the crisis situations which can be met by representatives of organisations is the phenomenon of hating on the Internet.

2. Hate phenomenon

Today, many companies and organisations struggle with the phenomenon of hate on the Internet. Stronger form of expressing disapproval and aggression is called “hate speech” defined as “oral and written statements and to present iconic abusing, accusing, mocking and demeaning groups and individuals for reasons partly beyond their control – such as ethnicity, ethnic and religious, as well as gender, sexual preference, disability or belonging to natural social group, as residents certain territory, representatives of a particular profession, speaking a certain language. It is a well-publicised verbal violence, an expression of collective hatred, addressed to the natural community, appointed by race, nationality, gender and religion, which does not belong by virtue of freely chosen beliefs” [Łobodziński, 2003]. In the narrower sense hate speech shall be understood as “covering all forms of expression which spread, incite or justify racial hatred, xenophobia, anti-Semitism or other forms of hatred based on intolerance including: intolerance expressed by aggressive nationalism and ethnocentrism, discrimination and hostility against minorities, migrants and people of immigrant origin” [Council of Europe, 1997, p. 107].

Less strong form of hate speech on the Internet is hate phenomenon that affects mostly messages shared using social media. “Hating” refers to those statements that are aggressive, but not meet the conditions qualifying them to the category of hate speech. These expressions refer to famous people, organisations, campaigns and also a variety of multimedia content posted on the Internet. People/users who post negative commentary on the Internet (in particular using social media) are called haters [Lange, 2008, p. 366]. Haters may be single people who are part independently of each other unflattering comments, and can also unite into hating groups. Their members meet on the so-called “hate pages” –

that is, pages that gather and speak persons against any other person [Włodarczyk, 2014, p. 132]. Often (as in the case of hate speech) content posted by such groups are on the verge of a crime.

Less aggressive behaviour of users on the Internet is trolling. Currently, trolling is intentional behavior and action to quarrels certain group (community) website. Troll provokes other Internet users to discuss, often in a very brazen and vulgar [Jachyra, 2011, p. 253-254]. Favourite places trolls are different forums and discussion groups, chat rooms and social media.

Currently, many campaigns in the Internet meets with the phenomenon of unjust criticism and ridicule. Hate phenomenon also applies to campaigns at universities. Digital hate is expressed by students or alumni usually anonymously on Youtube (using only nicknames) or on Facebook which a natural environment for young generation. There are also a few ways how to deal with negative feedback generated by social media followers/fans: ignore or delete (which are very bad solution), respond in kind, placate with a hollow apology, offer an apology and a solution which is the best one [Carole, 2012].

3. Methodology

The study will be conducted in selected universities. Differentiating variable is the organisational culture of these organisations . The researchers in their investigations relied on typology of cultures represented by Hofstede [2000] who specifies five levels of culture:

- national culture – cultural layer, which is a collective programming of the mind that are formed as a result of upbringing and growing up in a particular country. National culture, along with the collective memory is the national carrier of cultural tradition. The dimension of national culture is one aspect of culture, which can be measured and allows to determine the position of the culture to other cultures [Hofstede, 2000, p. 51].
- regional, ethnic, religious or linguistic culture – part of the national culture; it is a set of works of art, knowledge, standards and rules, occurring in a region/religion, etc. inhabited by the nation,
- culture associated with belonging to a particular gender – dimension indicates the diversity of roles by representatives of each sex,
- generational culture – culture associated with belonging to a social class,
- culture of social class – culture of belonging to a particular generation,
- organisational culture – all the fundamental assumptions that a given group has invented, discovered or created, learning to solve problems of adaptation to the environment and internal integration [Sobczak, 1995, p. 302].

From the perspective of this article is the most important national culture and its dimensions along with their basic attributes:

- power distance index (PDI) defined as the level of acceptance of members of the organization unequal balance of power,
- individualism (IDV) vs. collectivism understood as the intensity of the relationship between individuals – free or strong,
- masculinity vs. femininity – referring to societal gender roles according to which men are seen as people competing and focused on material success, and women – as a quiet, emotional and focused on quality of life,
- uncertainty avoidance index (UAI) – determining the extent to which members of the organisation are willing to avoid the unknown, uncertain, ambiguous and unstructured situations,
- long-term orientation (LTO) vs. short term orientation – defining the society in terms of the objectives aimed at future awards or perpetuating past, tradition and social commitments,
- indulgence vs. restraint (IVR) – determining the level to which people try to have control over their desires and impulses [Hofstede, 2008].

These dimensions of culture impact the behaviour of people within particular nations wherever they are and whatever lifestyle they have. These behaviours may also be reflected in the attitudes of consumers. It is believed that digital hate is expressed by societies with low level of indulgence and high level of uncertainty avoidance due to the fact that they relates to lack of tolerance, cynic and pessimistic behaviour.

In the study the method of netnography was used, which is a new form of ethnographic research that analyses the behaviour of individuals on the Internet that uses online marketing research techniques to provide useful insights [Jemielniak, 2013, p. 97]. Netnography is adapted to the study of outstanding, mediated by computer, conditions of today's social worlds. Netnography is faster, simpler, and also less expensive than traditional ethnography. It is more naturalistic and unobtrusive than focus groups or interviews. Netnography provides information on the symbolism, meanings, and consumption patterns of online consumer groups [Kozinets, 2002, p. 61]. Nowadays the method is used by scholars of organisation and management studies to understand worlds of online communities.

The best business Universities from the United Kingdom and Poland were chosen. According to Times Higher Education Ranking top 3 Business Schools in the United Kingdom are as follows: Said Business School at University of Oxford, Cambridge Judge Business School at University of Cambridge and The London School of Economics and Political Science [Times Higher Education

World University Ranking, 2014]. In Poland there were 3 Business Universities chosen. Two best business schools according to Perspektywy Ranking [Perspektywy, 2014]: Warsaw School of Economics, Kozminski University. The third business school is University of Economics in Katowice.

Saïd Business School at University of Oxford reports to be active on following social media sites: Facebook, YouTube, LinkedIn, Google+, Twitter [Saïd Business School, 2015] Cambridge Judge Business School at University of Cambridge reports to be active on following social media sites: Twitter, Facebook, YouTube, LinkedIn, Instagram, Google+, AudioBoo, Sina Weibo, Historypin, Pinterest, Flickr, Wikipedia, Issuu, Foursquare, Delicious, iTunesU, SoundCloud. [University of Cambridge Judge Business School, 2015] London School of Economics and Political Science reports to be active on following social media sites: Facebook, YouTube, LinkedIn, Twitter, iTunesU, Flickr, Delicious, MixCloud, SoundCloud, Mendeley, Pinterest and Storify [The London School of Economics and Political Science, 2015].

Warsaw School of Economics reports to be active on following social media sites: Facebook, Twitter, LinkedIn, YouTube, Flickr, Instagram, Google+ [Szkoła Główna Handlowa, 2015]. Kozminski University reports to be active on following social media sites: Facebook, Twitter, Instagram, YouTube [Akademia Leona Koźmińskiego, 2015]. University of Economics in Katowice reports to be active on following social media sites: Facebook, LinkedIn, Twitter, YouTube and VKontakte [Uniwersytet Ekonomiczny w Katowicach, 2015]. Two types of social media which are used by all Universities were chosen in order to analyse its content: Facebook and YouTube channels.

4. Results

Saïd Business School at University of Oxford profile on Facebook can be described as professional and vivid. There are 111,055 fans of the profile, whereas, the profile does not have visible statistics and reviews. The profile is a platform for sharing important news from University including: events, conferences, scientist, academia teachers, alumni or students' success stories, good practice or business advices in a form of movies, articles or presentations. The discussions are substantial, consider either the content of particular posts or the University. Some comments consider questions about particular students/employers' problems and the University replies to them. There is no form of digital hate phenomenon to be observed.

Cambridge Judge Business School at University of Cambridge profile on Facebook has 5,201 “likes”, 2,874 visits and 4,4 star as a rank from reviewers. There are 18 reviews among which 14 are the best comments, 1 with 4 out of 5 stars, 1 with 3 out of 5 stars and 2 with only 1 out of 5 stars. Nevertheless, there are no negative comments in a review site. What is more, there can be found only a few comments beside the posts on Facebook page, it means that the posts generate neither a lot of discussion, nor much “liking” activity.

The London School of Economics and Political Science profile on Facebook is a vivid one with 189,758 “likes”, 61,044 visits and 4,5 star review. There are 810 reviews in which 600 with 5 stars, 94 with 4 stars, 45 with 3 stars, 24 with 2 stars and 47 with 1 star only. The reviews with one star are usually substantial and consider no freedom of religion or speech, too big amount of social scandals and examples of nepotism. There are some comments about inadequate amount of beer. After analysis of comments under the posts on the Facebook wall it can be concluded that the comments usually do not consider LSE itself but objects presented on the pictures. Comments usually are of neutral or negative character, e.g. when the picture shows USA flag and the post consider the guest from USA, there are comments about destructive power of USA, when the picture shows stairs to the LSE library the comments consider lack of its usefulness or ugliness. Nevertheless, the discussions are not very intense.

Warsaw School of Economics profile on Facebook is a forum of information about University’s success stories, events invitation and news mainly. There are 22,536 fans of the profile, 11,892 visits and the profile got 4,5 stars from reviewers. There are 122 reviews in which 98 people gave 5 stars, 10 – 4 stars, 3 – 3 stars, 2 – 2 stars and 9 – only 1 star. Majority of the poorest reviews do not contain any comment. Negative comment concern mainly executive education program and consist of the criticism of its organisation. There are several job and credit advertisement. The comments are usually not commented, the amount of “likes” is on lower medium level.

Kozminski University profile on Facebook is stable and can be treated as a forum of news publication. There are 12,094 fans of the profile, 5,786 visits and it got 4,7 stars from the reviewers. There are 215 reviews in which 187 with the highest score, 9 reviewers gave 4 stars, 5 reviewers gave 3 stars and 14 reviewers gave only 1 star rate. Majority of reviewers who gave the poorest review with 1 star only did not comment on choice. If there was a comment, it usually considers the organisation of Career Centre and lack of their support in employability. Some bad reviews got the comment from Internet users who do not agree with negative review.

University of Economics in Katowice profile on Facebook can be also treated mainly as a forum for sharing news, events and success stories from University life. There are 12,417 fans, 5,740 visits and it got 4,2 stars from reviewers. There are 95 reviews within which there 67 – 5 stars, 9 – 4 stars, 2 – 3 stars, 2 – 2 stars and 15 – 1 stars. The reviews with 1 star only do not usually contain any comment, only several exemptions contain criticism of executive education program organisation. However, there can be observed that Vice-Rector for Education in personally answering to negative comments in an attempt to improve the situation. Due to the fact, that digital hate is usually non-substantial criticism and more complaining just for an idea to express negative emotions, the attempt of Vice-Rector to have a dialogue was unsuccessful. There is a small amount of comments on the wall, however, if there is a comments it is a substantial questions which consider the post or a positive experience of a reviewer.

Saïd Business School [2005], University of Oxford profile on YouTube has also professional character and with 564 videos uploaded it got 9,887 subscribers and 2,239,261 views. 108 comments in discussion site within which majority is positive and only several are neutral with suggestions of videos to be uploaded in the future. The video which is the most popular is called “Studying at Oxford” with 696,037 views, 1,350 people to like it, 70 dislike it and 500 comments. There is a majority of positive comments about dreaming to be part of Oxford. Only several comments consider sarcastic remark about an obligatory sacrifice of personal life in order to get to Oxford or about costs of studying there. There are about 5 joke comments about the sentence “the cleverest people on the planet think really hard about the hardest problems on the planet”. However, it can be concluded that there are all together 10 comments with a slight negative character, while majority is positive.

Cambridge Judge Business School at University of Cambridge with 415 videos got 1,765 subscribers and 243,714 views. No comments in discussion site. The most popular video which does not contain substantial economic speech and more promotional character is called “The Cambridge MBA – one year that will last you a lifetime”. It has 8,892 views, 13 people liked it, 6 disliked it and 6 shared it. There is only one comment which contains the question about the MBA program.

London School of Economics and Political Science with 1,688 movies got 45,794 subscribers and 4,453,296 views. 57 comments in discussion site within which majority is positive and only 3 were negative considering the funding of University. The most popular video with promotional content is called “A Day in the Life of an LSE Student” and was viewed 52,107 time, 132 people liked it, 6 disliked it and 17 shared it. There are 22 comments in which 21 are positive and only 1 is a sarcastic comment about the English language of other reviewers.

Warsaw School of Economics profile on YouTube contains mainly promotional videos or movies from official openings or closing ceremonies. With 75 videos uploaded, it got 215 subscribers and 54,686 views. The most popular video at the channel is called “Studies in English at Warsaw School of Economics” and it was viewed 8,041 times, 21 people liked it, 2 disliked it and 4 commented on it. 2 comments are negative about poor English knowledge and 2 are neutral about fees.

Kozminski University with 148 movies got 457 subscribers and 274,630 views. There is one comment in review site of the channel and it is positive. The most popular video on the channel is called “Wojciech Malicki – absolwent Zarządzania Zasobami Ludzkimi (ENG Subtitles)” and it was viewed 42,323 times, 1 person liked it, nobody disliked it, 1 person shared it and nobody commented. Kozminski University has generally small interactivity of channel what is expressed by small amount of comments.

University of Economics in Katowice YouTube profile uploaded 69 movies and got 229 subscribers and 369,422 views. The most popular video is called “Flash mob UE Katowice”. The movie reached 209,295 views with some statistics as follows: 60 sharing rate, 452 people liking it and only 68 disliking it. It means that there are almost 7 times more people who like the movie than those who dislike it. Nevertheless, it does not have a reflection in the comments. There are 199 comments in which 15 positive, 13 neutral and 171 negative. Negative comments concerned the video, but also there were insulting exchange of opinions between Internet users. The video was a victim of digital hatred.

Conclusions

Above described results lead to the conclusion that more negative comments and definitely less positive reviews are tend to be expressed by Polish society than British. The model of communicating via social media channel differs between countries so it might be one of the reasons of such a phenomenon. On the other hand, it can be also stated that polish due to low level of indulgence and high level on uncertainty avoidance are generally more tend to express digital hate, than British who have high level of indulgence and low level of uncertainty avoidance. The indulgence dimension can be defined as *the extent to which people try to have control over their desires and impulses*. Indulgence appears when the control ability is low, and restraint when the level of control is strong. Polish culture is one of the most restraint while British can be describes as indulged.

As a result, Polish have a tendency to cynicism and pessimism. Uncertainty Avoidance on other hand can be defined as a way that a society deals with the fact that the future is unknown: Polish with high level of uncertainty avoidance feel threatened by ambiguous or unknown situations, they maintain rigid codes of belief and behaviour and are intolerant to unorthodox behaviour and ideas. British are a definite contrary towards that. It may lead to the hypothesis creation that the higher the dimension of uncertainty avoidance the bigger promptness for digital hate. Second hypothesis is as follows: the lowest dimension of indulgence the bigger promptness for digital hate.

The research enabled to create the hypothesis however, it is recommended to conduct the research on bigger amount of Universities from countries with different levels of Hofstede dimensions in order to properly test it.

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E-learning in higher education – perception and use of technology supported learning by economic school lecturers

Michał Bartoszewicz & Daniel Gajda

Introduction

The results of recent studies suggest that the importance of e-learning is constantly increasing in both private and public organisations, where it serves as an employee's development tool [e.g. FOZ, 2012; Plebańska, 2013; Bartoszewicz, Gajda 2015]. However, the primary area of the use of e-learning has been and continues to be education, where it was brought to life in order to eliminate geographical barriers, enabling a distance learning [Papińska-Kacperek 2008]. Forms and the applications, as well as the advantages and disadvantages and barriers of the use of e-learning has been widely studied by scholars researching on school and academic education [Chrabąszcz, 2011; Gomes, Gomes 2013; Komańda, 2014].

The recent literature emphasises blended learning conception – the educational model combining traditional teaching with e-learning [Derouin, Fritzsche & Salas, 2005]. The results of the study reveals that blended learning is more effective than e-learning itself [Thomson NETg 2003], moreover, there are researches that suggest that blended learning may be more effective than traditional classroom learning [Chen, Jones, 2007]. Accordingly, for the purposes of this paper authors assume that in order to ensure higher results of courses, lecturers should combine traditional classes, with different forms of e-learning.

The goal of this article is to present lecturers approach towards e-learning as well as to determine the scale of their use of e-learning as a complement to traditional forms of classes. Inference is based on the survey conducted in one of the Polish economic universities. The basis of the research are the in-depth literature studies.

1. Literature review

1.1. Problems with e-learning as currently defined

The term “e-learning” is differently understood among practitioners (including managers, HR specialists, consultants) as well as management theorists, and therefore difficult to identify a universal and widely accepted definition of this concept [Plebańska, 2013, p. 150]. Literature [e.g. Wozniak, 2009; Czarkowski, 2012] contains many interpretations of the term “e-learning” that focuses on different aspects: technological, humanistic, business. It can therefore be concluded that the way to define e-learning depends on the context in which the term is used [Bernthal, Weaver & Wellins, 2002]. In addition, some authors [e.g. Mackay, Stockport, 2006] defines e-learning very narrowly, identifying it with learning through the Internet, while others [e.g. Hussin, Bunyarit & Hussein, 2009] treat the concept of e-learning more widely – as distribution of knowledge via CD/DVD media, or through a computer printout of training content [Hyla, 2012, p. 19]. Table 1 summarises the most interesting, according to the authors, definitions of e-learning, drawn from both domestic and foreign literature.

Table 1. Selected definitions of e-learning

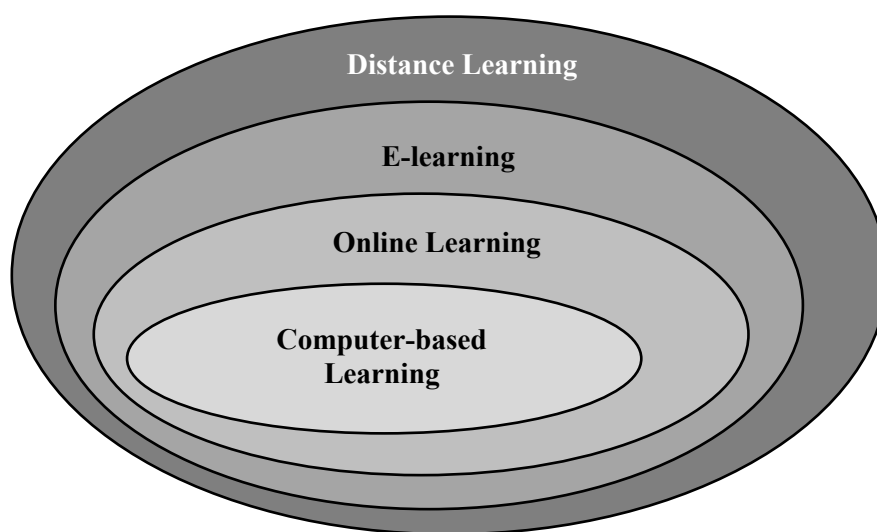
Author	Definition of e-learning
The American Society for Training & Development (ASTD)	E-learning – anything delivered, enabled, or mediated by electronic technology for the explicit purpose of learning. The term includes online learning, Web-based learning and computer-based training. It excludes things that might fit under “distance learning”, but are non-electronic, such as books
C. Baujard	E-learning is a process of learning, in which students acquire new skills and knowledge through information and communication technology
A. Billewicz	Electronic training (e-learning) – learning model that uses modern technologies and electronic tools for the creation, distribution and delivery of data, information and knowledge in order to improve the efficiency of the work and activities of the organisation
M. Favier M. Kalika J. Trahand	E-learning is a process that allows storage, absorption, distribution and sharing of information/knowledge through the computer using the Internet, as well as intranet, extranet, CDs and DVDs, groupware or video conferencing. It is oriented on learning solutions beyond the traditional paradigms of teaching (learning at specific times, in a given places with the teacher’s personal interaction with students)
M. Hyla	E-learning is any action that supports the training process, using information and communication technologies
E. Kaplan-Leiserson	E-learning includes the delivery of content via Internet, intranet/extranet (LAN/WAN), audio- and videotape, satellite broadcast, interactive TV, and CD-ROM
H. Hussin F. Bunyarit R. Hussein	E-learning may be defined as the delivery of formal and informal learning and training activities, processes, communities and events via the use of all electronic media like internet, intranet, extranet, CD-ROM, video tape, DVD, TV, cell phones, personal organisers, etc.
T. Teo	E-learning involves the use of electronic media (i.e. the internet, DVD, CD-ROM, videotapes, television, mobile phones, etc.) for teaching and learning at a distance

Source: Based on: [Kirschner, Paas, 2001; Favier, Kalika & Trahand, 2004; Derouin, Fritzsche & Salas, 2005; Baujard, 2006; Billewicz, 2007; Hussin, Bunyarit & Hussein, 2009; Teo, 2011; Hyla, 2012, s. 19].

Despite the differences in cited definitions of e-learning, one can notice certain features common in the most of the presented approaches. These definitions are characterising e-learning as: (1) the process of transfer of knowledge, (2) carried out usually (but not always) in teaching and learning at a distance, (3) based on the electronic media.

In the literature, the concept of e-learning is sometimes used interchangeably with terms such as distance learning, learning via the Internet (online learning), or learning using a computer (computer-based learning). Treating these terms as synonyms, taking into consideration the differences between them, is a sort of abuse. The differences between these forms of education presents Figure 1.

Figure 1. Subsets of Distance Learning



Source: [Bachman, 2000, s. 9].

E-learning, treated as a form of teaching and learning supported by technology, is a narrower concept than distance learning, which includes, in addition to e-learning, courses taught by mail. Teaching and learning using technology (e-learning) includes, in turn, learning via the Internet and learning using the computer without connection to the Internet. Thus, online learning and computer-based learning concepts are narrower than the e-learning [Clarke, 2004, p. 11].

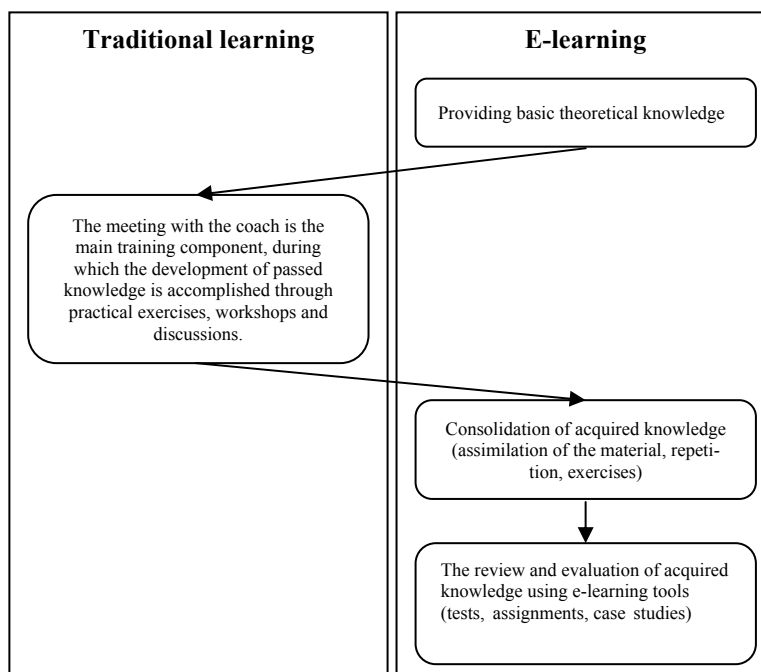
1.2. What is Blended learning?

E-learning can be a form of teaching and learning at a distance using electronic technology replacing traditional teaching, or a form of teaching and learning using electronic technology complementing traditional lessons in classrooms [Kisielnicki, Nowacka 2013].

The use of e-learning in conjunction with traditional learning activities is described in the scientific literature as blended learning [Derouin, Fritzsche, Salas, 2005]. According to the Rochester Institute of Technology blended learning can be called a learning process, in which 25%-50% of the classes are run remotely [Papińska-Kacperek, 2008, p. 380].

Blended learning is therefore a mixture of different forms of teaching, configured in different proportions and in different order [Flak, Pyszka, 2010]. It should be noted that the number of possible configurations of various forms of teaching is almost unlimited. In the scientific literature such configurations are referred to as blended learning models [Plebańska, 2013]. Figure 2 shows an example of such a model.

Figure 2. The example of blended learning model



Source: [Billewicz, 2007, s. 186].

The above model consists of four elements, but in other models of blended learning the number of components, number of links between them, and how they are configured may vary [Plebańska, 2011]. The structure of the adopted model of blended learning also depends on time possibilities, characteristics of the target group, and most of all the objectives one wants to achieve through the implementation of blended learning process [Plebańska, 2011].

Blended-learning combines the advantages of complementary teaching methods, while avoiding the drawbacks and weaknesses, which each method has when used separately [Plebańska, 2013]. Therefore, the results of the study reveals that blended learning is more effective than e-learning itself [Thomson NETg, 2003], and moreover there are researches that suggest that blended learning may be more effective than traditional classroom learning [Chen, Jones, 2007], the authors want to explore present lecturers approach towards e-learning as well as to determine the scale of their use of e-learning as a complement to traditional forms of classes.

2. Methodology of research

In order to achieve the main objective of this article, which was mentioned in the introduction of the paper, the authors conducted their own research on the use of e-learning by teachers as a complement to traditional teaching. Through the research authors sought to find answers to the following research questions: (1) Which forms of teaching, in the opinion of academics, is the most effective? (2) How academics evaluate various forms of e-learning used as a supplement to traditional classroom learning? (3) What is the scale of the use of e-learning by academics which complements traditional teaching? (4) In which area academics use e-learning most frequently as a supplement to traditional teaching? (5) Are highly rated by academics forms of e-learning used by them as a complement to traditional classes?

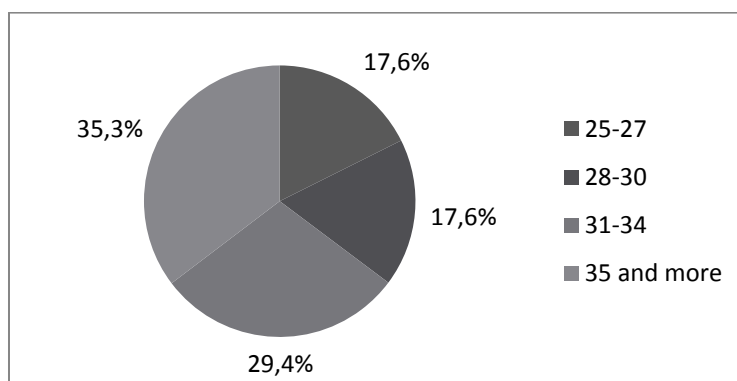
The study included all academics, employed as assistants in one of five Polish public schools of economics (a total of 59 people). The choice of school of economics was reinforced by the fact that it is the largest in the region university educating in the field of socio-economic sciences, where classes are held in both humanities and mathematics. The decision to choose assistants to the research sample was dictated by the specifics of the activities they conduct. Practical classes, as opposed to lecture courses, provide more opportunity to use different forms of e-learning as a complement to traditional teaching, as they are taught in smaller groups of listeners. As a result, it becomes possible to involve students in video conferencing, webinars, or in games and computer-aided simulations. In addition, activities carried out in smaller groups encourage the effective communication and make it possible to reduce the gap between teacher and students, which facilitates the use of other forms of e-learning – e.g. substantive consultation via e-mail, or even social network sites and chats.

The study was conducted with the use of questionnaire technique, using an online questionnaire consisting of 10 research questions, including open and closed questions, and 2 demographic questions. The questionnaire was placed on a specially created website, whose address, along with a request to participate in the survey were sent via e-mail to respondents. Statistical analysis of the collected data was conducted with the help of Microsoft Excel 2010 and IBM SPSS Imago 22. The test procedure consisted of the following stages: (1) the literature review in the field of e-learning and identification of research gap, (2) formulation of the main objective of the research, deciding on the scope of research and creation of research questions and hypotheses, (3) the selection of research tools and techniques, (4) developing a research tool and test procedures (5) conduction of the research, (6) organising and analysing the data, (7) formulation of conclusions.

3. Participants characteristic

The request to participate in the survey was positively answered by 17 out of 59 assistants, to which the questionnaire was sent. Manoeuvrability of the survey was therefore 28.81%. The age structure of the respondents is presented in Figure 3.

Figure 3. The age structure of the respondents



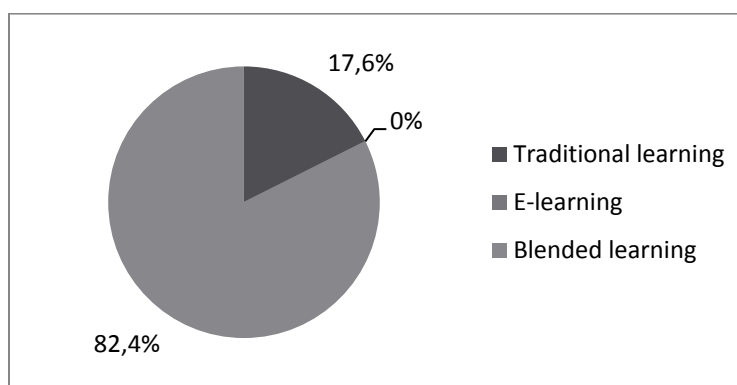
The age structure of respondents was dominated by people aged 35 and more years (35.3%), those aged 31-34 years (29.4%) and 17.6% of participants in the age of 25-27 and the same for 28-30.

The group of 41.2% of the surveyed teachers run humanities classes, while only 23.5% of them teaches mathematical classes. Number of 35.3% of respondents, carries out both humanities and math classes.

4. Empirical findings

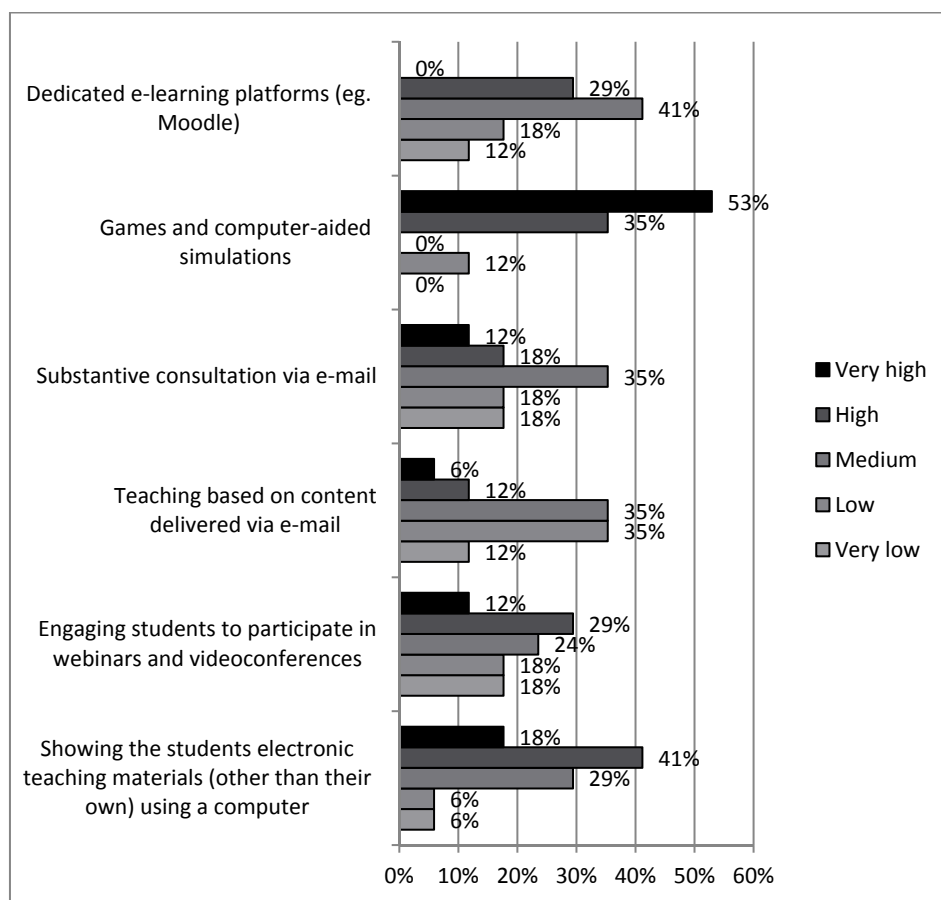
In the course of the study respondents had to choose which of the following forms of learning were in their opinion most effective: the traditional teaching, e-learning or blended learning. Figure 4 shows that the vast majority of teachers (82.4%) considered blended learning as the most effective form of teaching. In the opinion of 17.6% of respondents most effective among given forms was the traditional teaching. None of the respondents considered the e-learning as the most effective form of learning.

Figure 4. The most effective form of teaching in the opinion of respondents



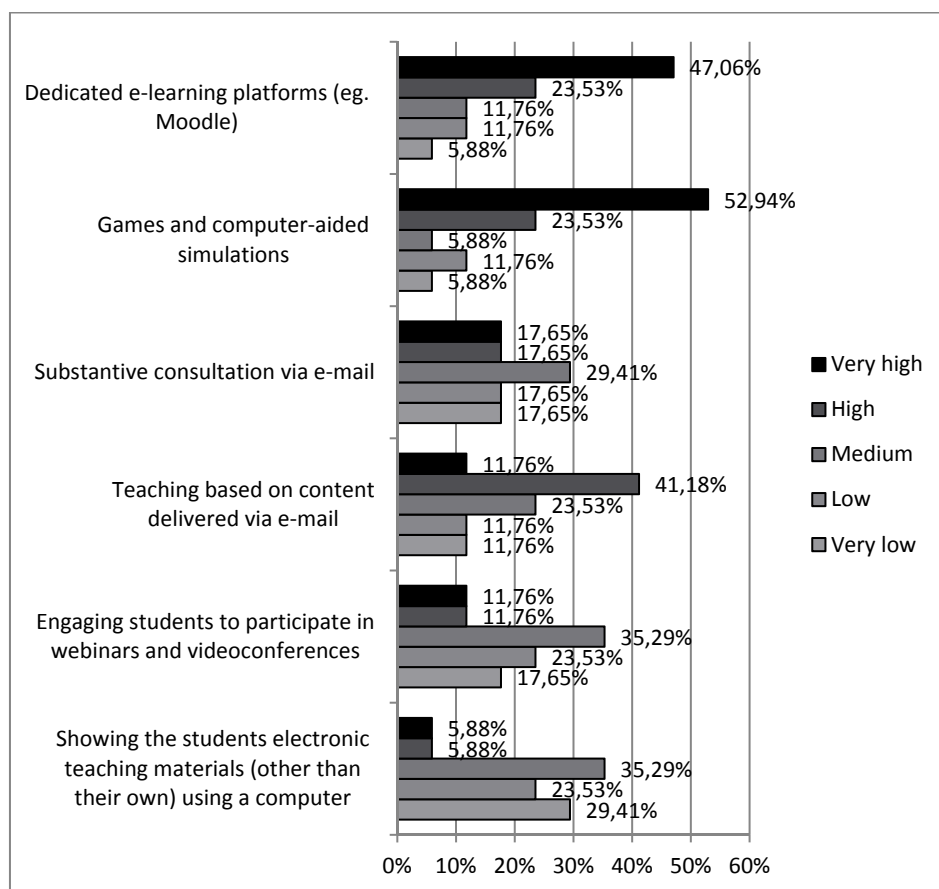
In the research respondents were asked to indicate the most attractive form of e-learning, the results are presented in Figure 5. Games and computer-aided simulations were indicated as the most attractive form of e-learning, 53% of respondents considered them as very attractive. From attractiveness perspective showing the students electronic teaching materials (other than their own) using a computer was also considered to be attractive (41%). The least attractive form of e-learning was substantive consultation via e-mail. For the rest of the forms, attractiveness was indicated as medium.

Figure 5. The attractiveness of different forms of e-learning used as a supplement to traditional classroom with students in teachers opinion



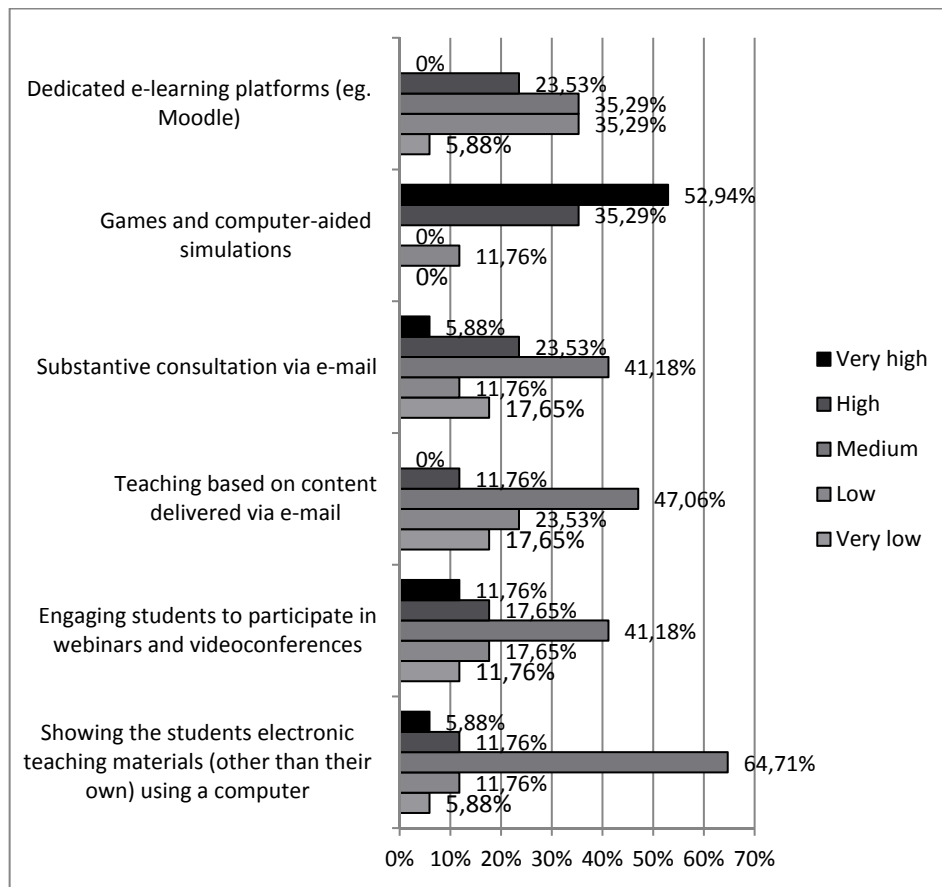
Another surveyed parameter was effort needed to prepare particular form of e-learning for students presented on Figure 6. According to this criterion, the least time consuming to prepare was substantive consultation via e-mail, teaching based on content delivered via e-mail and engaging students to participate in webinars and videoconferences. At the other extreme, respondents indicated games and computer-aided simulations (52%) as well as dedicated e-learning platforms for example Moodle (47,06%) as very time-consuming.

Figure 6. Needed effort for preparation of various forms of e-learning used as a supplement to traditional classroom with students in the opinion of teachers



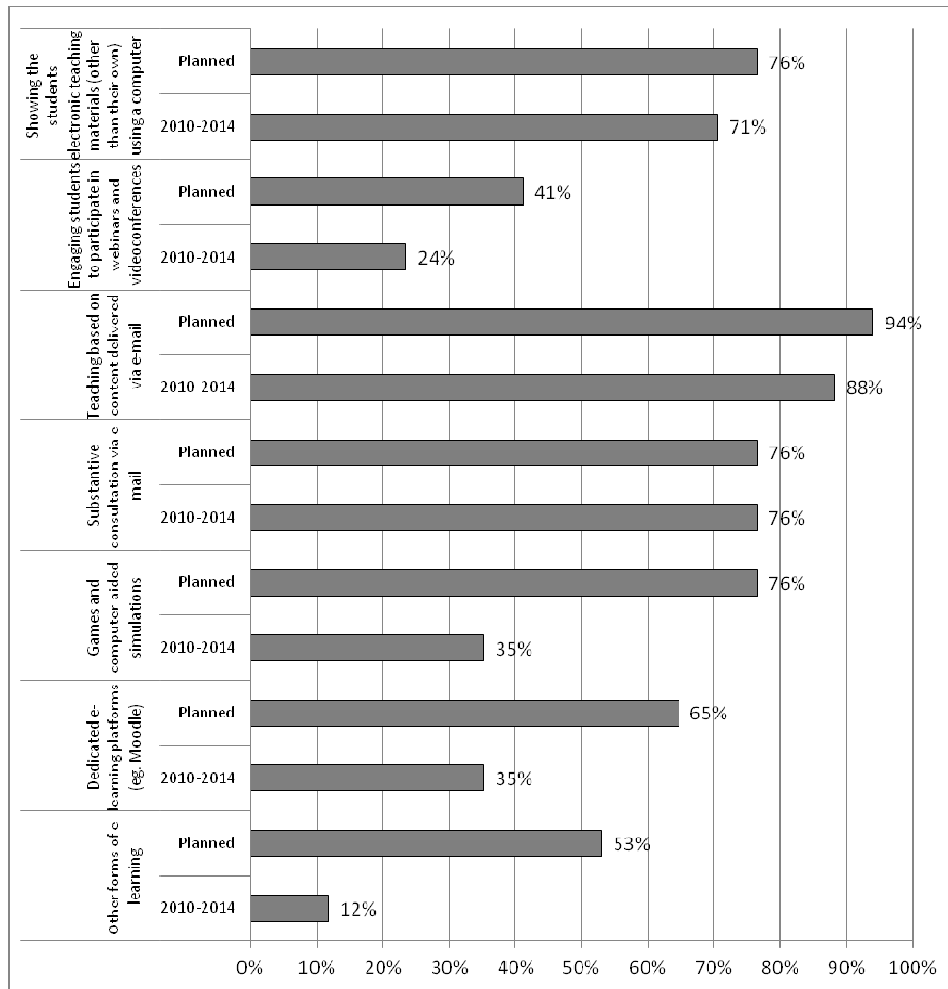
Effectiveness in transferring the knowledge presented in Figure 7 was another assessed criterion. According to the respondents the most effective form of e-learning were games and computer-aided simulations, where 52,94% of respondents indicated them as very effective. The rest of the surveyed forms of e-learning were assessed as medium effective. It is interesting that as much as 35,29% of respondents considered dedicated e-learning platforms such as Moodle to be low effective.

Figure 7. Effectiveness in transferring the knowledge of various forms of e-learning used as a supplement to traditional classroom with students in the opinion of teachers



Respondents were also asked about the use of different forms of e-learning in recent years and in the future what is presented in Figure 8 below. The figure indicates that the most popular, among the various forms of e-learning, was teaching based on content delivered via email. The use of this form of e-learning was declared by as many as 88% of respondents. Over three quarters of the respondents declared they conducted consultations via e-mail. A significant proportion of teachers (71%) was presenting electronic teaching materials for students using a computer. In addition, 35% of respondents used e-learning platform as well as games and computer-aided simulations. Every fourth teacher declared the engagement of students in video conferencing and webinars. 12% of surveyed teachers benefited from other than those listed forms of e-learning.

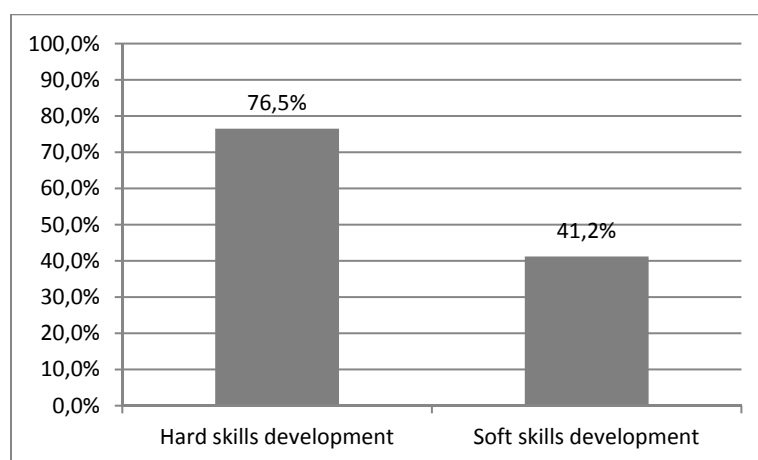
Figure 8. The use of different forms of e-learning by academics as a supplement to traditional teaching in 2010-2014, and planned for the future



According to the respondents their use of all of the surveyed forms of e-learning will grow in the future. Engaging students in webinars and videoconferences will nearly double from 24% in recent years to 41% in future. Showing the students electronic teaching materials using a computer will grow from 29% up to 76% in the future. Games and computer-aided simulations will grow from 35% to 76% also the usage of dedicated e-learning platforms is plan to grow from 35% to 65%. This part of the survey clearly demonstrates the increasing popularity of e-learning at the examined university.

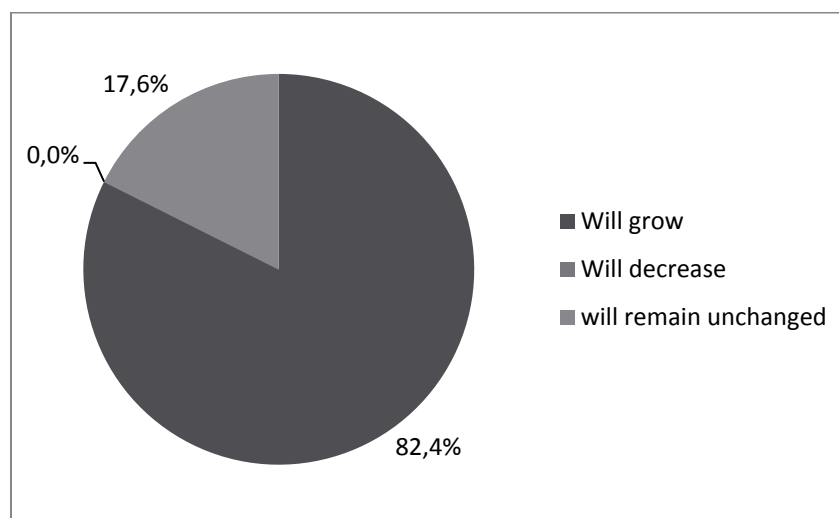
In order to identify the area in which Assistants of studied university use e-learning as a complement to traditional classroom with students, authors asked respondents to indicate whether e-learning teaching forms are used in the development of hard competences or soft skills. Given the fact that some teachers carry out classes developing both types of competencies, hard and soft skills, individual respondents had the ability to simultaneously identify both answers. The results of the study suggest that e-learning teaching forms are used relatively more often in the development of hard competencies. This area was indicated by more than three-quarters of respondents (Figure 9), while the use of e-learning in the development of soft skills declared only 41,2% of survey participants.

Figure 9. The areas of e-learning use as a complement to traditional classes



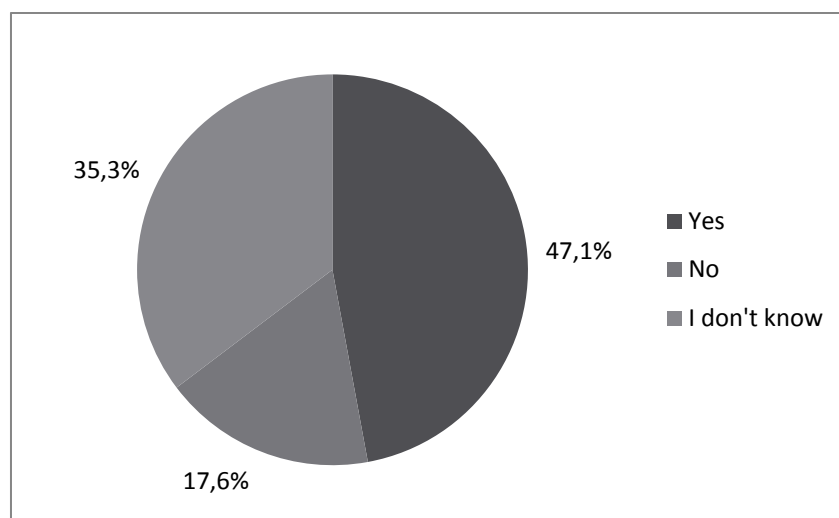
As part of the research assistants also expressed their subjective opinion on the intended use of e-learning in general (as a complement to traditional classes) in the near future. As shown in Figure 10, the vast majority of teachers (82.4%) indicates that the use of e-learning which complements traditional teaching will grow. Less than a one fifth of the total (17.6%) of respondents stated, that the scale of the use of e-learning in the near future will remain unchanged. None of the respondents expected that the scale of this phenomenon will decrease.

Figure 10. Projected use of e-learning forms of teaching as a complement to traditional classes in the opinion of academics



According to the Figure 11, nearly half (47.1%) of the surveyed teachers believed that students independently undertake to participate in e-learning trainings. More than a one third of respondents (exactly 35.3%), had the opposite view. 17.6% of teachers participating in the study could not indicate an unambiguous answer to the question.

Figure 11. Self-participation of students in e-learning in the opinion of teachers



When asked about the advantages of e-learning used as a supplement to traditional teaching, academics most frequently pointed: no time limited availability of learning content for students, saving time during classes associated with the lack of necessity of taking notes on the issues discussed, an opportunity to submit more materials to students, the attractiveness of e-learning itself, the availability of learning content to students anywhere, and moreover, an opportunity to submit content that presentation during regular class would be difficult, the ability to consolidate the knowledge gained during the traditional class, the possibility of having a good and quick contact with students, adapting the pace of work to the capabilities of a student and high efficiency in transferring of knowledge.

When asked about the disadvantages of e-learning forms of teaching used as a supplement to traditional class with students, respondents most frequently mentioned the need to pay additional (unpaid) time to prepare the content. In addition, the most significant drawbacks of e-learning to support traditional teaching were: lack of personal contact with the teacher, time-consuming preparation of educational content, little interaction from students, lack of feedback on assimilation and understanding of the learning content, lack of control over the process of acquiring knowledge, distracting Internet environment, exterior communication¹ and the danger of copyright violence by students and third parties.

The main recognised barriers of the use of e-learning as a complement to traditional academics classes were: lack of adequate infrastructure (computers, software, access to the Internet), inaccessibility or limited availability of some e-learning solutions, insufficient knowledge about e-learning and the lack of skills to create e-learning content, the reluctance of students to assimilate the information outside of the classroom, lack of commitment and systematic work of students, lack of time, the reluctance of teachers to change and costs of some solutions.

Conclusions

Conducted research showed that the vast majority of teachers of examined university (82.4%) considered blended learning, which combines traditional learning with e-learning, as the most effective form of teaching. The obtained results are confirmed by literature findings, which suggest that blended learning is more effective form of learning than the e-learning [Thomson NETg, 2003] and, moreover, may be more effective than traditional classes in classrooms [Chen, Jones, 2007].

¹ The term is understood as focus on solving the problem rather than an in-depth understanding of its essence.

In the opinion of respondents games and computer-aided simulations were indicated as the most attractive forms of e-learning. The least attractive form of e-learning was substantive consultation via e-mail. The least time consuming to prepare were judged substantive consultation via e-mail, teaching based on content delivered via email and engaging students to participate in webinars and videoconferences. At the other extreme, respondents indicated games and computer-aided simulations as well as dedicated e-learning platforms as very time-consuming. According to the respondents the most effective form of e-learning were games and computer-aided simulations. The rest of the surveyed forms of e-learning were assessed as medium effective. It is interesting that as much as 35,29% of respondents considered dedicated e-learning platforms such as Moodle to be low effective.

Close to three-quarters of surveyed participants indicated that the share of e-learning forms of teaching in their university activities ranges between 0%-15%. This reflects the small scale of use of e-learning among teachers of the examined university. Nevertheless when asked about future, respondents answers clearly demonstrated the increasing popularity of e-learning.

Among the various forms of e-learning, most popular was teaching based on content delivered via email. The least popular were the videoconferences and webinars, as well as e-learning platforms and games and simulations. With these solutions used by accordingly 24%, 35% and 35% of those surveyed.

The results of the study shown that e-learning teaching forms are used more often in development off hard skills. This area was indicated by more than three-quarters of teachers surveyed, while the use of e-learning in the development of soft skills declared 41.2% of those participating in the survey. This result is not surprising, because in the literature [e.g. Derouin, Fritzsche & Salas, 2005] for a few years now, there is a discussion of the legitimacy of using e-learning in the development of soft skills. The development of these competencies requires the training of verbal and non-verbal skills, implemented mostly during the “face to face” training with the teacher.

Hypothesis that there are highly rated forms of e-learning that are not often used was partially confirmed in the study. Analysing data presented in Figures 5, 7 and 8 it can be easily seen that there are forms of e-learning highly rated by teachers in terms of attractiveness and effectiveness in the transfer of knowledge, which, however, are less often used. This are games and computer-aided simulations and videoconferences and webinars. An in-depth analysis of the collected data allows authors to conclude that this phenomenon may be a result of high efforts needed to use these particular solutions.

Conducted research on the use of e-learning by teachers as a complement to traditional classes should be treated as a pilot before a competent, more in-depth studies, so that the results of these studies apply only to the university tested and cannot be generalised. Appropriate tests should cover a much larger number of universities, and greater number of teachers. Among the respondents, except for employees employed as assistants, lecturers who run practical classes could also be included in surveyed sample. Interestingly, although very challenging would be to conduct comparative studies, whether at the national or international level. The authors hope that this article will inspire to undertake further research on the issue of using e-learning in higher education as a supplement to traditional teaching.

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Role of interface agent in decision-making process – analysis of opinions of students of Econet project

Edyta Abramek & Mariia Rizun

Introduction

Econet is a project aimed at developing e-learning activities for five state high schools of economics in Poland, i.e. the University of Economics in Katowice, Krakow, Poznan, Wroclaw and Warsaw School of Economics [Econet, s.a.]. Since the year 2005 teachers of the Department of Informatics at the University of Economics in Katowice have prepared and run the lecture “Decision-making based on hybrid models” on the Econet platform.

The models are created when building an objects or testing a phenomenon in real conditions is costly, dangerous or at risk of failure because of the lack of information about its behaviour. The essence of modelling is to present the system or phenomenon by simplifying its construction and testing its dependence on the external factors. Hybrid models are the result of integration of a number of different models, such as simulation, agent or analysis. The use of a particular model in the decision-making process and its application for solving complex decision problems comes out of the analysis of the situation and the given problem.

The article pays particular attention to the issue of usage of the interface agents for simulation models and in the decision-making process. Software Agents [Nwana, 1996, p. 6], including interface agents, due to their knowledge of the environment and to the interface engine they are capable of taking independent action and to learn. Software agents are used to solve problems related to communication, monitoring, inference, discovering information and knowledge, semantic relationships and ontologies.

An agent technology can help deliver better performance in tasks associated with collecting, filtering, processing information requests, checking the sender and authorisation or prohibition to execute those requests, monitor systems, war about the risks and make decisions. Moreover, it can support the conversation; provide explanations or expertise, such as in the case of agents that are part of websites or management software systems in companies.

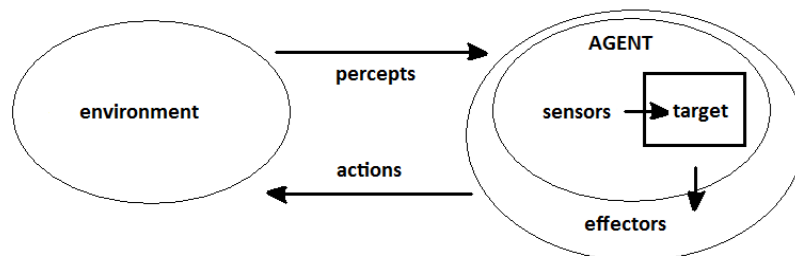
We can distinguish the following areas of agents' application [Paprzycki, 2003]:

- information management (e.g. agent adviser/guide, agent monitoring the phenomenon),
- distributed systems (e.g., agents searching the Internet, agents managing a computer network – software update),
- complex systems modelling (e.g., price negotiations, control of the production process).

So far, there is no single generally accepted definition of the software agent. Most commonly the agent is defined as “a computer system located in a certain environment, capable of autonomous reaction (in that environment) in order to perform programmed actions” [Wooldridge, 2000].

Figure 1 shows the so-called rational agent. Rational agent is one that should perform actions so that they lead to an increase of its effectiveness based on a sequence of observations and knowledge of the environment, in which it operates. The fact that the agent takes reasonable action is supported by: knowledge of the environment/surrounding, previous observations of agent (percept sequence), the repertoire of its actions/shares and the degree of effectiveness of the agent (performance measure), i.e. how often the agent reaches its target [Russell, Norvig, 1995, p. 33]. Agent receives signals from the environment by means of sensors, and influences it by means of effectors.

Figure 1. Agent's interaction with environment



Source: [Russel, Norvig, 1995, p. 32].

It should be noted that a single agent does not have sufficient knowledge about the environment in which it occurs. Therefore, the complexity of the problems is the main premise to create the so-called multi-agent systems, or a community of software agents (software agent societies), for which the trust is the basis of activity.

1. Interface agent and its application in e-learning

In the paper, the particular attention is paid to the interface agent. Interface agents are usually portrayed as assistants, helpers working with a user and assisting him. It is usually (but not always) represented by an avatar (presentation module) that can communicate with the user (communication module) due to the use of artificial intelligence mechanisms. The artificial intelligence placed in it permits the to take appropriate actions on the way to the target.

Interface agent should primarily be characterised by such features as:

- autonomy of action (Autonomy),
- the ability to learning itself (Learning) [Nwana, 1996].

These features are necessary for the interface agent so that it could effectively perform the tasks of the user. Autonomy means the ability to act independently without human intervention. On the basis of the methods associated with the use of rule-based systems, neural networks and fuzzy logic the agent can individually make a choice of action. Ability to take initiative and not just to react on the environment is a feature referred to as proactive. Agents have internal states, as well as specific targets that allow them to act on behalf of a user. Learning of agent is the opportunity to improve its performance with the course of time. This ability is especially useful in a volatile, dynamic environment. As noted by H.A. Aboulenien and P. De Wilde [1998], agent is a type of interface assistant who:

- cooperates with the user in the specified operating environment,
- must possess knowledge in the field, which it supports.

The creation of such an interface agent is not an easy task. The agent interface must analyse the context of statements [Pfleger, Löckelt, 2008], respond to user's questions, share knowledge, learn from the user and articulate its emotions (then the agent has the personality). In the case of the interface agent, we should also pay attention to such a feature as personification, which means assigning human characteristics to the objects, phenomena and abstract notions. Thanks to the personification a user receives an agent as a unit with human attributes. Personification from a technical point of view is possible through the inclusion of mechanisms for generating graphic form of the agent and the use of speech synthesizers. All these features of the agent met the process of interaction with the human richer in contrast to the standard informatics systems.

Therefore, interface agents can be used as an element of architecture of informatics systems, representing their extension. There are different variations of this type of interface agents, i.e. desktop agents (they assist users when working with a computer), the Internet guides, virtual characters, agents to talk (chatbots, chatterbots).

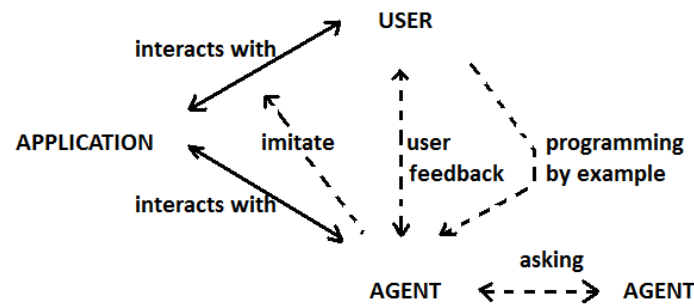
We can formulate the thesis that there is a correlation between the efficiency of decisions taken by people, and the ability (speed) of interface agent response to task environment conversion.

The thesis has been verified on the example of actions of the interface agent, which is part of a computer game, prepared for the needs of the e-learning lecture. The game was attached to one of the modules of the e-learning lecture, as a method of activating classes with students at the e-learning platform. The final aim of the game is to create a business plan – the document required by the bank at the stage of applying for a loan. The loan allows to obtain funds for the business venture. The game is divided into two stages, which are the same when it comes to business conditions and constraints prevailing in the game. The difference lies in the fact that during the first round the player makes all decisions independently, trying to get the best financial result and financial ratios as high as possible. During the second round the gamers are benefiting from the help of the interface agent, which seeks to facilitate the game helping the player make decisions and receive a higher score.

2. Functioning of the interface agent and its way of communicating with the user

The concept of interface agent, among other works, appeared in the work of A. Kay in 1989: “[...] the agent: computer process that acts as guide, as a coach, and as amanuensis. The user interface design will be the critical factor in the success of this new way to work and play on the computer” [1989, p. 130] or P. Maes in 1994: “Agents radically change the current user experience, through the metaphor that an agent can act as a personal assistant. The agent acquires its competence by learning from the user as well as assisting agents from other users” [1994]. The interface agent is able to learn directly from the user and from other agents. Learning means being able to improve the performance of the agent with the course of time, which is particularly evident in the changing environment. Interface agent learns through observation and imitation (detects certain repetitive patterns of the user) feedback, explicit user input (e.g. during training agents regarding how to behave in certain situations) or adjusts basing on users’ feedback (Figure 2).

Figure 2. How does the interface agent communicates and learns?



Source: [Maes, 1994, p. 5].

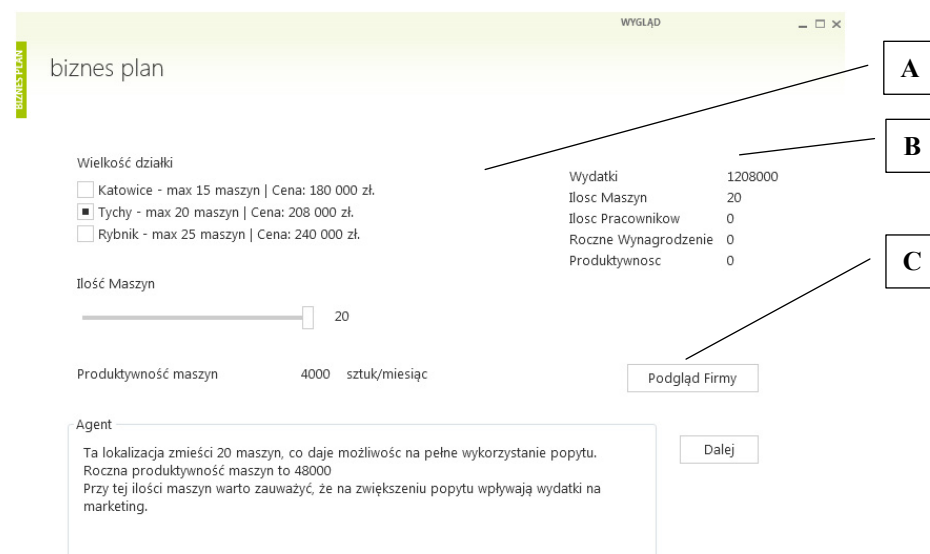
Table 1 shows the characteristics of the interface agent, which is part of a computer game, prepared for the needs of the e-learning lecture.

Table 1. Characteristics of the interface agent

Agent type	Agent interface as part of a computer game
Target of the operation of agent	Obtaining by students the best results during the game
Environment	A group of students
Percepts/observations of agent	The input data
Actions/activities of agents	Suggestions, tips, hints, calculations
Sensors of agent	Check boxes, data entry
Effectors of agent	Messages, calculations and indicators appear
Efficiency	To what extent the agent did the job, achieved its target?

The task of the agent interface is primarily to facilitate interaction of the system (the game) with the user and to support the user in the actions he undertakes. Interface agent during its work operates on the decisions taken by the player. The decisions relate to: manufacturing plant localisation, employees, orders and sales. The user interface is divided into three areas (see Figure 3). The presence of the agent reflects itself through the areas, in which the agent gives hints in response to player's actions (C), and provides data computation (B). The agent of this type is able to interpret the message and build on its basis a response or hint to the user.

Figure 3. The window of the computer game with agent in action



A. Part of the window responsible for player's decisions.

B. Part of the window for the calculations provided by the interface agent

C. Part of a window with agent's hints, which are its reaction to the actions taken by the player

Source: Screenshot of the computer game.

The game ends with a displayed scoreboard, showing what decisions were taken in each round. Figure 4 shows an example of the results obtained by the Econet student from the University of Economics in Krakow.

By combining the results of the game each player can compare the decision obtained without the aid of an agent interface with that received with the help of the interface agent. Each participant of the lecture was given a task of preparing the final report with the results obtained in the game and the explanation of these results. Students who participated in lectures in the winter semester 2014/2014, have expressed the following opinions about the interface agent:

- Student of the SGH: both in the first and the second games my results do not promise good future for the potential investment. However, the results achieved in the second game are undoubtedly better. Without a doubt this is thanks to the support given by the interface agent. Its instructions proved to be very important in the decision-making.
- Student of the UE Krakow: Through the use of interface agent the task has become much more understandable. I was surprised that such small tips have helped me understand the problem. There was no need to have a pen and a paper to perform calculations or to wonder whether what I'm doing will certainly give the desired effect.

- Student of the UE Krakow: Results of using the interface agent are much more favourable for the analysed business plan of the company.
- Student of the UE Katowice: Work with the help of an interface agent greatly simplifies and accelerates the process of creating a business plan. Interface agent will keep you informed about the consequences of any changes in the values and right from the first time you can get the desired results and evaluation indicators of financial analysis.

Figure 4. Summary results of the game

Student UE Kraków

Gra samodzielna		Gra z agentem	
Lokalizacja :	Tychy	Lokalizacja :	Katowice
Ilość maszyn :	7	Ilość maszyn :	12
Ilość pracowników:	12	Ilość pracowników:	24
Wynagrodzenie pracowników:	2415	Wynagrodzenie pracowników:	2270
Ilość części do lalki:	1000	Ilość części do lalki:	20000
Ilość części do robota:	400	Ilość części do robota:	8800
Ilość opakowań:	1400	Ilość opakowań:	28800
Rabat %:	0	Rabat %:	0
Cena lalki:	95	Cena lalki:	85
Cena robota:	190	Cena robota:	185
Jakość wykonania:	wysoka	Jakość wykonania:	normalna
Wydatki na marketing:	duże	Wydatki na marketing:	małe
Sprzedano lalek:	1000	Sprzedano lalek:	20000
Sprzedano robotów:	400	Sprzedano robotów:	8800
Pozostało lalek:	0	Pozostało lalek:	0
Pozostało robotów:	0	Pozostało robotów:	0
Pozostało opakowań:	0	Pozostało opakowań:	0
Wskaźnik rentowności aktywów.	-18,5373886814134	Wskaźnik rentowności aktywów.	5,23958611481976
Wskaźnik rentowności kapitału własnego.	-35,4066666666667	Wskaźnik rentowności kapitału własnego.	4,9676582278481
Wskaźnik rentowności sprzedaży.	-150,944210526316	Wskaźnik rentowności sprzedaży.	6,131953125
Zwrot z inwestycji.	-0,35406666666667	Zwrot z inwestycji.	0,049676582278481

**The results without
an interface agent**

**The results by using
an interface agent**

Source: [Miklaszewski, 2014].

To summarise opinions of the students we should state that the interface agent definitely helped them in making decisions. Decision-making caused the feedback on the effects of this decision. The agent interface is equipped with the knowledge of the assumptions accepted in the game; in addition it regularly calculates the value needed to take further decisions and assesses decisions made on the background of the company. Its use during the game helped to save time on the stage of business planning. Working with the interface agent also allowed to prepare easily and quickly different scenarios of development of the company changing its location, number of employees, number of machines purchased for production, etc.

It should be noted that:

1. The interface agent is not a substitute of the application interface. Designing an interface agent requires also the user interface [see Figure 2 and 3].
2. The interface agent is not always personified or anthropomorphic. Agents can also act in a manner invisible to the user.
3. In the case of the interface agent it is essential to understand and control the dialogue and the ability of the agent to learn [Stanek, Pańkowska, Żyt-niewski, 2008 p. 173].

The agent interface is used in various fields such as consulting, entertainment, marketing, commerce, PR and e-learning, or wherever there is a contact with man. In the paper, the agent was used as part of the game, which allowed to build interest and commitment from user and provided the element of competi-tion and fun. The characteristics of the case study are presented in Table 2.

Table 2. The characteristics of the described case study

The name of the project	Creating a business plan using the interface agent
Nature of the project	Quality, building commitment to promote the competition
Target	The game is designed to help understand what aspects are important when preparing a business plan
Methodology	Narration (with and without the use of an interface agent) and context (creating a business plan)
Restricts, challenge	Limitation of time – two steps/levels of the game
Feedback	Comparison of the results in tables, which contain the result of the game without the help of an agent and with it
Expectations	The role of the interface agent in business planning and decision-making

Gamification is certainly an interesting idea for learning solutions. It forms part of a trend that today it is less important what we say than how we want to say, present or show. Visually, compact form prevails over the text.

3. The role of the interface agent in the decision-making process – the results of tests

The game added to one of the modules of the e-learning lecture “Decision-making based on hybrid models” has also become a contribution to a broader discussion on the following topics:

- Is it right to include the interface agent into the decision-making process?
- What role is played by the interface agent in business planning?
- Is it right to include the interface agent at the stage of business planning?

These questions were given to be discussed by the students of the e-learning lecture. Table 3 shows the number of responses with their division into positive, negative and neutral opinions, obtained at the from students' forum.

Table 3. The opinions of students of Econet lecture

Launch date of lecture	The number of people who participated in the discussion	Number of responses YES	Number of responses NO	Number of neutral responses
29.09.2014	4	2	0	2
25.02.2014	3	2	0	1
1.10.2013	1	0	0	1
20.02.2013	0	0	0	0
3.10.2012	1	0	1	0
16.02.2012	0	0	0	0
28.09.2011	1	1	0	0
23.02.2011	3	3	0	0
6.10.2010	4	3	0	1
24.02.2010	1	1	0	0
23.09.2009	4	1	2	1
16.02.2009	0	0	0	0
19.09.2008	3	3	0	0
14.02.2008	1	0	0	1
6.03.2007	1	1	0	0
26.09.2006	7	0	2	2
08.03.2006	7	2	3	2
TOTAL	38	19	8	11
	100%	50%	21,1%	28,9%

The lectures are run every semester, so the table shows the launch date of subsequent lectures. The obtained results indicate that students recognise the need to include interface agents at the stage of decision-making. The need for planning is obvious, but on the other hand, “planning is one of the most difficult and complex intellectual activities in which a person may be involved” [Ackoff, 1993]. Planning enables one to deal with the complexity and variability of the environment; improves understanding of the company and makes decisions better. Having a business plan is also required in applying for a loan or in case of attracting investors. For a person starting a business activity it is a signpost showing what actions should be taken at different stages of running a company.

3.1. Recommendations of students in favour of using the interface agent in decision-making

The interface agent is able to communicate with the user, granting him immediate response and monitoring his activities and the environment. By monitoring user activity the agent suggests solutions to keep the user informed about the possible consequences of his decisions. Interface agent enables planning of ac-

tivities. It ensures the presentation of information in the right place and space, helping the user in decision-making. The key issue in the user-agent conversation is the context of the situation. The agent can customise its suggestions to the characteristics of the person it are talking to. Agent's hints are not affected by errors based on thinking through the prism of emotions. The interface agent is the decision-making process, so it can propose actions that can help prevent risks or at least minimize their impact. The inclusion of the agent is important because of the quality of decisions. With the help of an agent, you can easily test different scenarios for action. The entrepreneur can thus test the sensitivity of the planned business to specific changes in the environment. Enabling the agent at the planning stage is a correct decision because of the large number of factors or the restrictions a user can forget. Using the agent, we are sure that it does not omit certain variables. The agent is working around the clock. It can be run in the cloud, so you do not need to invest in additional infrastructure.

3.2. Skepticism regarding the inclusion of the interface agent in the decision-making process

Among the negative opinions there were such points of view that poorly designed agent can even disturb and slow down decision-making processes rather than assist in decision-making. The agent requires the creation of an extensive knowledge base. The agent requires very high computational power. Currently, we are not able to create an agent so that the expenditures on its creation would bring the expected profit. Its suggestions must be clear, logical and precise. The agent must be supported by good theoretical base, which requires knowledge and experience of designers. Agent's speed must be adapted to the user's response. It is imperative that the agent gave hints on the basis of earlier decisions of the user (the ability to learn). The agent should propose various options to attain the goal, showing on this occasion what effects individual decisions actually bring. The development of the interface agent should be made towards the widest possible assistance to the user (creativity and cognition).

3.3. A moderate level of optimism among students

An interface agent to some extent replaces the expert in a certain field, alerts about issues to which the decision-maker may not pay attention, gives you tips and highlights the way that you choose. On the other hand it may not be able to predict many things. Agent is very useful in many areas. It helps to systematise information and can help by providing tips, information about the consequences

of decisions taken. But one must always remember about common sense – the final decision shall always belong to the user. Interface agent in the case of a decision (credit) is important at the stage of completing the documentation, advice, data collection, analysis and presentation of information. At the stage of decision-making its role is much less or even zero. Interface agent does not need to have an image; in the end it is only a graphical representation which in fact has to be adapted to the user's expectations. The agent should have a track of decisions taken by the player, so that already at the next stages of the program or game it could give more specific suggestions and its behaviour would not be linear.

Conclusions

The aim of this study was to select recommendations regarding the characteristics that the interface agent should possess, or what mistakes we should not make when designing the interface agent, from the point of view of students of the e-learning lecture. During the preliminary tests the objective of the main research decomposed. Two main sub-themes were identified:

Sub-theme 1: "The role of the interface agent in the process of creating a business plan". The study was conducted using a computer game (hard gamification). Sub-theme 2: "The role of the interface agent in the decision making process". The study used an interview method using the discussion forum of the e-learning platform.

Due to the fact that the interviews did not include a large group of students, their effect has been used to clarify or deepen the conclusions obtained in the mode of quantitative research (Table 3). The analysis of students expressions, gathered on the e-learning platform, allowed the selection of recommendations with regard to the characteristics of the interface agents. The data collected are not comprehensive [see StanuschTechnologies, s.a.] because the development of the interface agents remains a challenge for theoreticians and practitioners [see Carroll, 2001]. According to the authors, it is needed to highlight that research can be carried out in a new and interesting way, using the elements of gamification. And all this is done to engage the respondent and provide knowledge of a better quality.

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Part VII

Higher education institutions and labour market

IT business and science sector ecosystem vs. holistic knowledge relations model in selected cases

Izabela Sztangret

Introduction

The innovative entities have been using new tools to create relations based on value-changing, especially knowledge because global customers are more exacting and they take decisions more knowingly. Holistic business ecosystems show the possibility to gain synergy effects that are result of combination of competencies of systemic partners, for example universities and IT enterprises. The purpose of this article is to identify the structure and profile of business ecosystem, in the case of selected IT leaders and their science sector co-operators, in the area of knowledge-based relations, particularly with reference to new media tools. Critical analysis of literature in the field of studied category is conducted in the article; furthermore qualitative method of empirical studies (case study) is applied for practical illustration of described processes and phenomena. In the initial stage of the research IT product leaders have been selected, through the review of experiences, and with the use of the criterion of their position on the Polish market. They are: IBM, Intel, HP, Microsoft, and Apple. Then their network scientist-partners and cooperating entities have been determined, and sub-networks of partners have been selected. In the period between 2000 and 2015, the author regularly analysed the content of Internet webpages of selected entities and authorised press / sponsored interviews presented in IT magazines, including Computerworld, IT-manager, CIO and others. As it is shown by research results, the identified model of holistic knowledge ecosystems in IT sector and scientist partners is multi-subject, multifunctional and multi-tool.

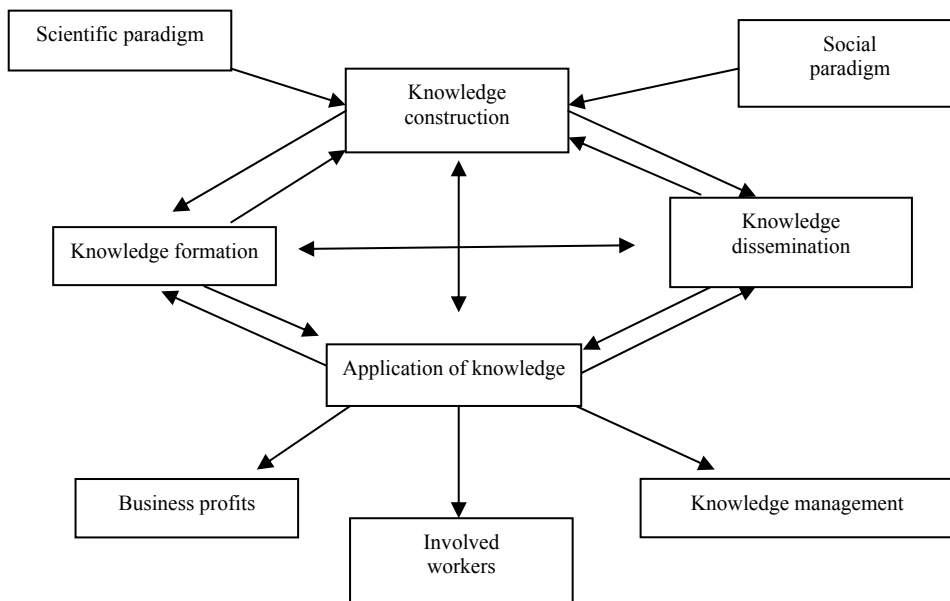
1. Holistic/integral model of knowledge management (KM) – identification of research category

According to one of the first holistic approaches to knowledge management, in Alavi's and Leidner's view, it is defined as systematic and specific process of acquiring, organising and communicating workers' implicit and explicit knowl-

edge in organisational terms, for the purpose of increasing effectiveness of productivity of other involved entities, while showing the presence of „other entities” of the environment in the process in a quite concise way [Alavi, Leidner, 1999, p. 239]. KM was more broadly perceived by Bounfour who approached it as a set of procedures, infrastructure, technical and management tools created for the purpose of creating, sharing and expanding knowledge resources inside and outside organisation [Bounfour, 2003].

A holistic/integral approach to knowledge management is undoubtedly presented by Demerest's model. The structure of this model shows not only a scientific expression of knowledge, but also social aspects of knowledge formation. It is not limited to the stage of knowledge externalisation, but concerns repeated social interactions. Knowledge management ought to be supported by all organisation stakeholders, which, consequently will be reflected in results of all involved parties. This is about a complementary approach to knowledge management as scientific and social category (Figure 1).

Figure 1. Modified model of knowledge management by demerest



Source: [McAdam, McCreedy1999, pp. 91-101].

Holistic approach to knowledge management (SET KM Model) is based on three pillars: (1) company strategy, that is, strategic organisational concept of knowledge and learning, (2) environment of creation, co-sharing and applica-

tion of knowledge, dependent on the company and objective determinants, (3) knowledge tools favouring the process of effective knowledge management [Choo, 1998; Nonaka Konno, 1998; Von Krogh, Ichijo, Nonaka, 2000; Alvarenga Neto, 2008].

According to Choo's views, the company functioning as knowledge-based is an enterprise that approaches knowledge in strategic dimension (1), through the prism of its significance in a particular context of creation and decision making. The awareness of the importance of knowledge in a definite dynamic and complex environment of company functioning, the ability to search for and interpret appropriate information that allows for understanding of trends and scenarios of the environment that is made of customers, cooperating entities, competitors and other stakeholders, constitutes the strategic goal of the company. Knowledge creation is a process of forming and/or acquiring knowledge, or information organising and processing for the purpose of generation of new knowledge through dispersion and learning in organisation. New, generated knowledge, constitutes foundations for assumptions aiming at creation of new knowledge and thereby development of new skills and competences inside the company, and among other participants in the so-called knowledge-community, in which the entities of science sectors can be the participants.

According to Choo, decision-making process is driven by searching for alternatives that are at least satisfactory from the point of view of a certain enterprise in particular conditions; selection of one of the solutions assumes resignation from others, and thereby, compromise and/or costs of possibly lost chances resulting from other solutions. A definitely rational decision would require perfect competences of the organisation in the sphere of acquisition of information, as well as knowledge assimilation and engagement.

On the other hand, according to Pfeffer and Sutton [2000] it is believed that it is not enough to know what to do, but how to act in practice. Therefore, knowledge management is also located in strategic area of company functioning while combining management preferences with realities of operational level.

Nonaka and Konno are the authors of the concept of knowledge creation environment (2) [1998] and Nonaka, Tsoukas and Snowden are still its promoters. Knowledge environment is a context in which knowledge is created and applied. This environment can have an actual nature (that is office area, organisational units in company, entities in the network), and/or virtual nature (that is the form of e-mail, videoconferencing, online relations), and/or psychical nature (that is expressed in ideas and concepts). Knowledge environment can be created by

individuals, task groups, project teams or informal groups of stakeholders. Knowledge environment is made of sub-spheres of creation, interaction and dialogue, as well as systematisation and the process using and accessing. This corresponds to each of the elements of SECI Model by Nonaka and Takeuchi. The aforementioned concept of knowledge environment ought to be enhanced by elements inside the organisation that favour creativity. They include trust, tolerance and care. According to Alvarenga Neto, „favouring conditions” are necessary on tactical level as an element combining strategic dimension of knowledge management with its operational realisation. In this context, knowledge management should not represent its control, but promoting creation and making it available within knowledge-based organisation, that is, the ecosystem of knowledge. Nonaka and Takeuchi as well as Von Krogh also indicate other elements shaping the knowledge context: creative chaos, refunds, structures, organisational culture and human behaviours, as well as leadership and the vision of the future. Alvarenga Neto and Choo performed systematisation of factors constituting the knowledge context. They distinguished four groups including social and behavioural, cognitive, information as well as business and management groups that are configured in various ways on various stages of creation, transfer and application of knowledge in company environment [Choo, 1998].

IT tools as well as practices and processes serving implementation of the concept in actual operations are the third sphere of holistic model of knowledge management (3). They differ depending on the level of implementation of knowledge management. This is because strategic level is focused on formation of knowledge community, space for organisational learning and tools of strategic concept of knowledge formation. Operational level rather concerns coordination in implementation of tasks resulting from strategic concept of knowledge management, application of competitive competences and market research.

According to the definition of marketing knowledge perceived as customer's and cooperant's knowledge, knowledge obtained from the customer and cooperant, and also for them, the process of knowledge management occurs in the subsystem of relations inside organisations and knowledge-based relations with cooperants and with customers. Their role can be performed by entities of the science sector. The Author's Holistic Model of Marketing Knowledge Management in the context of series of diversified knowledge-based relationships in IT network structures, in which entities from educational system are participants, is more broadly presented in the Author's publications [e.g. Sztangret, 2015].

2. Data and methodology

The purpose of this article is to identify the structure and profile of business ecosystem, in the case of selected IT leaders and their science sector co-operators, in the area of knowledge-based relations, with special reference to new media tools. The paper includes the critical analysis of literature in the field of studied category and for the purpose of practical illustration of described processes and phenomena qualitative method of empirical studies (case study) is applied. In the initial stage of the research, IT product leaders have been selected, through the review of experiences and with the use of the criterion of their position in the Polish market. The selected leaders include: IBM, Intel, HP, Microsoft, Apple companies. Then their network of scientist-partners and cooperating entities has been determined, and sub-networks of partners have been selected. In the period between 2000 and 2015, the author regularly analysed the content of Internet webpages of selected entities and authorised press / sponsored interviews presented in IT magazines, including Computerworld, IT-manager, CIO and others (Table 1).

Table 1. Basic information about performed research

Specification	Characteristics of performed study
Research technique	analysis of literature, analysis of Internet pages, analysis of sponsored interviews in IT journals
Sample selection	purposeful selection by indications of position in the ranking of companies by turnover
Sample size	5 promoters of network relationship
Criteria of selection of sample group/cooperants	targeted selection by indications of promoters
Spatial range of research	global/Poland
Time range of research	2000-2015

In-depth case study analysis method used in this research consists in a comprehensive presentation of a real situation occurring in a particular company or in regard to one of the functions performed within the company (e.g. marketing knowledge management), which is treated as an individual case. It involves seeking for all necessary data enabling its in-depth analysis, formulating possible choice options and making the best possible decision, accompanied by a proper justification. Application of this method seems well founded, considering the following:

- the research concerns contemporary, dynamic phenomena and the process of knowledge formation, pertaining to these phenomena;
- the research concerns investigating actual contexts of these phenomena, with reference to significant ambiguity of boundaries between the very phenomena and their contexts;
- the object of the research is too complicated, to explain cause and effect relationships with the help of methods such as poll or experiment.

The unit of analysis / the subject of the studied case are „complex situations”, i.e. groups of economic entities (particularly leaders of network structures and partners) and their market behaviour. The case reflects changes that are new and to some extent critical for the investigated subjects, particularly in Polish conditions.

3. Methods of knowledge co-creation in IT business and science sector ecosystems

While giving access to innovative technologies, partnership with government, enterprises and non-profit organisations, thanks to the tools of implementation of the program of knowledge creation in the sphere of cooperant strategy, Intel, HP, Apple and IBM companies form the ecosystem of knowledge diffusion. The tools of support of knowledge-based relationships with cooperants/customers in all studied cases have the social and cultural as well as technological nature with elements of financial support. The sector of education, particularly university education, is in all studied cases the key target group of activities associated with knowledge diffusion. Formation of knowledge communities, often for the purpose of counteracting information exclusion of some social groups, favouring social and economic development of the countries through extensive application of information technologies, in view of studied companies, is also the reflection of implementation of their program of business ethics. Relationships occurring between studied entities most often have the nature of *asymmetrical social networks* (Table 2).

Table 2. Structure and features of knowledge ecosystems by studied companies

	Program 2	Co-implementers 3	Addressee 4	Tools 5	Goal and form 6
1	Moving Young Minds (Poruszyć Młode Umysły); Nauczanie ku przyszłości (Teaching towards the future) Odyseja innowacyjna (Innovative odyssey) Intel Edukacja (Intel Education) Teachers Engage Community	x	teachers at primary and secondary schools	direct relations and online website	conferences, direct trainings in the sphere of application of technology in classroom activities, online trainings
Intel	Otwarty program nauczania (Open curriculum) Intel Academic Community Intel Education Solutions Blog	companies, government, representatives of universities from the countries of EMEA region	research workers at higher education institutions and students	direct and online relations	symposia on global educational strategy, scientific forum, sponsoring of university research and grants in the sphere of application, telecommunication architecture, communication, microprocessor technology and systems, programs aiming at implementation of technological solutions, Intel lectures for students, Ph.D. studies in 12 European research and development institutes
	Ventures of Intel International Science and Engineering Fair (ISEF), International fairs of science and technology Partnerstwo dla Przyszłości (Partnership for the Future), Microsoft Unlimited Potential, Microsoft Educator Network, Microsoft Safety and Security Centre Skype in the Classroom, IT Academy, Microsoft Innovation Centres	x	students	direct relations and online website	scientific competition, activation of students in initiatives
Microsoft		governments, non-governmental organisations, leaders of the sector, scientific environment	teachers and students	direct and online relationships – Microsoft Student Innovation Suite, Centra Nauczania Technologii (Community Based Technology and Learning Centre, Project Ikonk@, Centrum Edukacji i Aktywizacji Zawodowej Osób Niepełnosprawnych (Centre of Education and Occupational Activation of Disabled People), Stowarzyszenie Gniazdo (Gniazdo Association)	Sub-program: trainings and courses (certificates in the sphere of Microsoft technology), Computer laboratories, Internet reading rooms, global lesson conducted via Skype

Table 2 cont.

1	2	3	4	5	6
HP	Microsoft Imagine Cup, TEALS (Technology Education and Literacy in Schools), YouthSpark SummerCamps, Kodu Game Lab	x	students	direct and online relations	Subprogram Education: technological competition developing interests associated with technology and innovation outside school; internship program; playing through experiencing technological solutions; co-designing of computer games
	Academy Council at Microsoft	x	universities	direct relations	Development of cooperation in the sphere of didactics, research and implementation of IT solutions at universities
	Nowoczesne wizje edukacji (Modern visions of education)	schools, universities, local government, social organisations and non-commercial organisations	teachers, students, tutors, the unemployed	direct relations, Centrum Edukacji i Badań HP (Centre of HP Education and Research)	Preventing digital exclusion
	International Technological Institute Hewlett-Packard (IIT HP)	x	IT specialists, lecturers, students	direct relationships, Centrum Edukacji i Badań HP (Education and Research Centre HP)	Testing and using tools of data storing and processing and also infrastructure administration and management
	Centrum Społeczności Cyfrowej HP (Centre of Digital Community HP)	GazetaEdukacja.pl and MultiWiedza.pl, GazetaEdukacja.pl, Young Digital Planet SA (YDP), Krajowe Stowarzyszenie Pomocy Szkole (National Association of Support for School), Association „Miasta w Internecie” (Cities on the Internet)	schools, teachers, students	direct relations	Computer lines and terminals, network architecture, multimedia laboratories, HP Multisat solution

Table 2 cont.

1	2	3	4	5	6
IBM	Watson University Partnership IBM Academic Initiative	x x	universities, universities, lecturers, students	direct and online relations direct relationships: 200 Days of Bluemix events, Big Data and Analytics EdCon, ConnectED 2015 conference, Bluemix events, IBM Innovation Centres workshops and technical seminars, Enterprise Systems Educators Conference, Master the Mainframe online reports: blogs	Testing of solutions and knowledge exchange Testing the tools for: Business analysis Process management Cloud computing Cognitive computing Enterprise computing Information management and Big Data Management of IT, Marketing and Trade services Data security Social business Software engineering
	University Research and Collaboration	universities, enterprises, local authorities	universities, lecturers, students	direct relationships	Awarding entrepreneurship and innovativeness of universities; promoting information and knowledge exchange between the entities of close environment; creation of the environment of commercialisation of university research results, knowledge exchange with business, cooperation and publication of common research results
	IBM University Relations Program	x	university community	3,756 online communities	Exchange of technological thinking and knowledge
	Students for a Smarter Planet Program	universities, enterprises, local authorities	university community	events	Exchange of technological thinking and knowledge, particularly in the sphere of „smart products”

Intel Company implements, for example, *Intel Education Initiative* project, within the framework of *World Ahead* program that consists in formation of Innovators' Society (operational programs for example: Intel Learns Program, Intel Computer Clubhouse Network). The means of program implementation include Financial and technological support for teachers (Intel Teach Program), students (Intel Science Talent Search, Intel International Science and Engineering Fair, Intel Schools of Distinction) and universities (Intel Higher Education Program) all over the world, particularly those specialised in innovative solutions for science, mathematics and technology.

The program is aimed at teachers and its goal is to increase effectiveness of conducting classes while integrating technology and course book knowledge. 5 million teachers from over 40 countries were included in the program. In 2011 the number of teachers participating in the program reached 13 million. The standards of teachers' knowledge of information and communication technology (ICT) were developed collectively by CISCO, Intel and Microsoft as well as International Society for Technology in Education (ISTE), Virginia Polytechnic Institute and State University Virginia Tech while creating, at the same time, a specific technological park for innovativeness. These initiatives are aimed at increasing the role of technology in teaching during classroom activities, increasing the access to technology and technological activity. The goal of cooperation with institutions of higher education is to accelerate the research development and expand curricula while adjusting them to quickly changing technology. Intel activates the environment to undertake post-graduate and Ph.D. studies in faculties associated with science, while thereby popularising technological solutions applied in them.

Within the project *Microsoft Unlimited Potential*, Microsoft Company intensifies previous activities that consist in application of technology and trainings in partnership with organisations all over the world for the purpose of transformation of educational systems, cultivating local innovativeness and creation of workplaces and chances for development. This is consequently aimed at maintenance of continuity of the cycle of social and economic development for creation of educated target markets. On the other hand, HP established, among others, the *Centre of HP Digital Community* that provides trainings to teachers, students, tutors and the unemployed, particularly in poor regions. HP notices long-term market possibilities both in developed and developing regions that currently do not have access to advanced technology, and provides them with the knowledge about this subject. S.C. HP centres are established in cooperation with the network of partners: schools, institutions of higher education, local governments

and social organisations, as well as with non-commercial organisations. These centres function in many countries of Europe, but also in Africa (e.g. in France, Ghana, Hungary, Ireland, Jordan, Northern Ireland, Russia, Portugal, Ukraine, Scotland, Senegal and Republic of South Africa). On the other hand, *HP Centres of Education and Research* are a result of implementation of the program of International Technological Institute Hewlett-Packard (IIT HP). Its major goal is to educate the high class specialists in IT sector and to provide both students and lecturers with access to the latest technologies. Thanks to appliances, the Centre is equipped with, the students have the opportunity to gain knowledge about methods of data storing and processing, as well as infrastructure administration and management. IBM company functions within the framework of created program called *Mądrzejszy Świat* (Smarter World) while undertaking activities aiming at providing equipment for systems, and processes driving the world with data and smart solutions, including the sector of education.

Apple company as the only one implements the concept of knowledge ecosystem thanks to competent relations, based on specialist technological/information knowledge, with final and business partners while not distinguishing the entities of the sector of education in a special way, although knowledge is created in 63 global knowledge communities (e.g. Austrian MacintoshOnline Community, Mac OS Mailing Environment, Internet Only Macintosh Users Group, AamAttorney, University of Chicago Macintosh User Group, The Macintosh Guild, etc.) in which community in general is the participant.

Unfortunately, as results from Computerworld research of 2009, only 52 IT enterprises in Poland declared cooperation with institutions of higher education, out of which only 27 stated expenditures on research and development. However this cooperation was often perceived as delivering software, providing equipment to computer laboratory or conducting practical classes for students. Each of the 27 enterprises cooperated on average with two scientific entities and only three of them with foreign centres. Akademia Górniczo-Hutnicza (AGH University of Science and Technology) in Karkow and Warsaw University of Technology were most frequently indicated scientific centres. Apart from these entities Instytut Badań Systemowych PAN (Systems Research Institute of Polish Academy of Sciences) in Warsaw and Wrocław Research Centre EIT+ were also indicated. The state policy does not create enough incentives to run research and development activity and cooperation with institutions of higher education. The lack of interest in innovativeness ought to be mentioned. It is the consequence of the assessment of the institution by The Ministry of Science and Higher Education through the prism of publications and regardless of application of research results in practice [Cellary, 2013, p. 45].

Conclusions

Detailed analysis of the literature on the subject and selected examples of practice, allows for observing significant scientific interest in the issues of knowledge management, including holistic approach. However there is no reference to practical application of the concept of holistic knowledge management. Observing the processes of knowledge diffusion in ecosystem of the knowledge of entities for which this resource is fundamental, is particularly interesting for the Author. Thus, it was possible to identify a series of practices implemented by studied entities that perform a significant role in IT sector which they represent. These practices constitute Multi-subject, Multi-functional and Multi-tool holistic model of knowledge management of these entities.

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Soft skill competency of the futures employee

Andrea Solym, Boglarka Eisingerne Balassa & Zsuzsa Stion

Introduction

„Schools, as little islands, surrounded by the depths of conventions and traditions isolate themselves from the land of real-life. Their inhabitants, who live there only intermittently, arrive there on a little retractable suspension bridge in the morning and leave the island in the afternoon. Why do the young island-dwellers visit their island every day? In order to learn to to live on the land itself!” [Carr, 1942].

In our study we mainly concentrate on answering such questions, which concern the development of the expectations of economy towards vocational training and education. Hopefully our research, for the sake of the development of the network between economy and education may point out such potentials, which – often due to the lack of communication – are missing.

The economic needs of the country and the vocational training do not match, they are not aware of each others’ needs, and potentials. At the end of 2011, a new Act of Public Education was accepted by the government of Hungary replacing the former act. At the same time, a new law for vocational training has also been created. As an effect of changing the laws, the former educational system, which was strongly decentralised, became increasingly centralised. In vocational training, the role of the Hungarian Chamber of Commerce and Industry became even more vital, leading to a total domination of this training sector today. The fact that the Chamber is taking such a major part in education could be a guarantee for the vocational training institutions to meet the real needs of the labour market.

It is critical to assess the expectations of economic entities concerning schooling and the development of labour force from both sides. Also the question of competence is to be taken as top priority because today’s society is built upon knowledge, and many researchers [Castells, 1998; Cooke, 2001; Kővári, 1995; Bencsik, 2009] emphasise that knowledge has become a major deciding factor in competitiveness. We believe that lexical knowledge is paramount in the question of competitiveness, but in reality the appreciation of competences, or more precisely the non-professional (soft skills), is the most essential thing at the beginning of the XXI century.

Our study depicts the network between vocational training and the other economic operators, emphasising the role of competencies beyond profession (soft skills) both from the side of supply and the side of demand.

1. The concept and place of vocational training in employment policy

The training system is one of the subsystems of the social system, and works in a close relationship and synergy with the other subsystems. So it can be stated that the parts of two subsystems, like the vocational training are in close connection with the economic sector's, the other subsystem's areas [Ferge, 1984; Archer, 1988].

How the regime change or the change of the economic structure affected education, and within that the vocational training itself, could be summarised as the following; the appearance of the market economy conditions, the surge of working capital meant new technologies, working methods and organisational strategies. As a consequence of this, the appreciation of expertise started to increase. The needs of the economic operators changed and new concepts appeared, like the labour market or human resources [Gyökér, 2001]. These changes lead to the emergence of such needs as the need to change the institutional structure of vocational training, and the structure of professions.

The regime change and the change of the system lead to the rethink of efficiency, both in the functioning of the institutional system, and both in education. But what do we mean by efficiency in the areas of education and training?

Something can be considered effective, if it is able to fulfil the needs of the those who are interested in it and able to complete the objective laid down with the expected conditions, with the least expenditure possible, and in the least amount of time possible. It is customary to speak about efficiency in relations of two factors, the relationship of expenditure and effectiveness [Radó, 2000; Torgyik, 2004]. The definition of efficiency, level by level, could be summarized based on the work of A. Semjén [szerk., 2001], as the following:

- Society: involving people in training, employment, guarantee of labor, GDP – growth.
- Employer: has experts, only have to pass on special knowledge, flexible.
- Training institution: low failing and school leaving rate, good exam results.
- Individual: Career, remaining costs.

Education as consumption and as an investment cannot be taken separately, this investment process is equally important for both the individual and the society as well. In his study, Z. Eszik [2009] expressed the following opinion about the school system: “the competent school system, as the integral part of the local

communities, have to be measured in that social force-field, which is transparent and either directly or indirectly pliable for all the participants – who are all the actors of the local school politics as well. In order to achieve this, a meaningful dialogue between the congruent and authentic teachers, headmasters, experts, and politicians has to take place, as the most important factor.”

2. The concept of vocational training

The Council of the European Union addressed the free movement of labour in the areas of the Community in its 1612/68. decree, which was issued on the 15th of October in 1968. The European Social Chart's (accepted in 1961) 10. item's 3. a) and b) points are concerned with vocational training. Hungary ratified the document in 1998. In this, the right for vocational training is guaranteed, the technological development, and the importance of re-training are taken as top priority, and they undertook to provide adult educational possibilities [Zachár, 2002].

To meet the goals set during the meeting in Lisbon, the development and renewal of the educational and training systems will be necessary [Strohmeier, 2004]. Employment policy, the solution of social problems, and the creation of competitive knowledge in the fields of economy and science are given special attention. It is strongly emphasised that the needs of the economy has to be estimated. The goal is to prepare competitive labor for entering the labour market, and not to train people who will be potentially unemployed.

A more narrow definition of the vocational training's concept is a hard task. According to Zsugyel, "by the concept of vocational training customarily a practical, professional training is meant, which prepares those students who only received basic, or secondary education for various professions, which do not require higher educational qualifications. In this definition, vocational training is separated from university and college education, which prepare those students who complete their higher education for professions with higher social prestige. In the recent period, the definition of vocational training somewhat changed and particularly in the process of European integration it went through a kind of re-definition. On the one hand, this is due to the fact that some professions have a higher requirement for knowledge, and that there was a loosening of social restrictions between the practical professions and those, which require higher levels of education. On the other hand it is in connection with the fact that vocational training is now defined by a larger European framework" [2008].

As it is clear, vocational training could not be precisely defined on the basis of its current glossary, so to achieve clarification we approach the field of vocational training by impounding its basic functions.

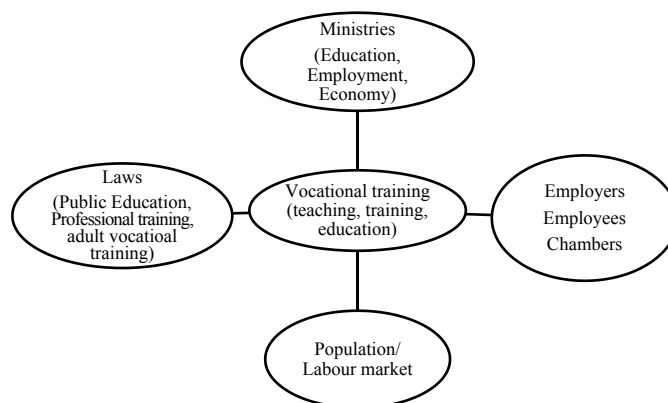
So by vocational training from now on we mean such theoretical or practical education, which prepares primarily the upcoming generation for certain crafts, jobs or professions – in other words careers. There are two ways for this to become a reality: the vocational training in the school system (upcoming youth) and the vocational training outside of the school system, as a part of adult education (lifelong learning).

3. A short situational picture of employment in the light of vocational training

When a study is created about the development of vocational training and the analysis of networks, understanding the situational picture of the employment policy is vital, since this is the environment in which the needs, methods and expectations of the development of vocational training can be interpreted. Since the employment shows a correlation with the completion of school studies, the harmonisation of needs would be critical between the upholders of the institutions, the educational system and the economic operators.

In her article, É. Farkas [2006a, 2006b] writes that the operation and efficiency of the vocational training system, and its implementation as it is written in the law depends to a great extent on the intention, and position of the interested parties of the system. The participants of the network are shown on Figure 1.

Figure 1. Participants of the network of vocational training



The paradox of professional training is that the needs of certain employers and employees do not necessarily coincide, even if the former would actually like to employ the latter. The need of the employer is to get an employee who is able to fulfil the expectations, but the long term need of the employee is to not be dependent on a certain company, but to be able to find a job in as wide of a circle as possible. This paradox appears in vocational training profoundly.

In our study we tried to find a solution for this paradox and mainly assessed the role of soft skills in it. In the next section it will be shown what is meant by these competences, i.e. what the soft and hard elements actually are in practice.

4. The issues of vocational training in formal education

As it was already explained beforehand, the analysis of efficiency is one of the most important threads on which the net of connections, the network could be built upon. In the following section the problems of those concerned with vocational training will be summarised.

For those students who are participating in vocational training, one of the most crucial questions are always occupational guidance, and choices. The Work Center is the only organisation today, which is able to receive young people at any point of the year. Such a good working system would be needed, which would have to and be able to fulfil the following tasks:

- The starting of courses in specialisations, which would be able to fulfil the needs of the economy, the reducing of those specialisations, which are difficult to enrol, the influencing of professional structure in vocational training institutions, and concerning the latter the increasing of the role of the Chambers in it, which is considered high priority by the government.
- The influencing of the school enrolment ratios, concentrating on skill shortages. The ensuring of employment in the professions learned, and the reducing of drop-out rates is also a significant challenge, which can be solved together by education, employment policy and the economy.

The criticism concerning the economic sector against the upholders and the vocational training schools greatly justifies the necessity of changing the law on vocational training because they are not holding trainings, which are needed by the labour market. There is a problem showing in the number and quality of those who finish their studies. This is also paramount because by the analysis of certain investments the labour market analyses (is there professional labour in the given geographical area) should enjoy first priority [Juhász, 2008].

There is no monitoring system in vocational training, the drop-out rates are high, and the remedial programs are missing. On the basis of our secondary research the highest deficit is showing in the case of practical training in holdings, schools and vocational training centers. Larger holdings do not or barely maintain any vocational training centres because those who work in the private sector have no time for students. The small number of participating entrepreneurs is also a problem.

We assume that even those who work with a large number of students rather use them to acquire tenders or other funds, not necessarily keeping in mind their support or the tapping of their potential.

Last, but not least the defects of the monitoring system of professional development and carrier will be summarised. Currently there is no overall, actually usable employer needs analysis, although the establishment of its basis is already in progress (TÁMOP) and its necessity is promoted by both the secondary level and the higher level vocational training as well.

Primary research

The summary of the academic literature, where the points of connection between vocational training, employment and competences were shown, is followed by the introduction of the results of our research. We formulated the following as our research questions:

- What kind of cooperation could be observed between the market participants, the educational institutions and the national institutions in the support of new entrants to the labour market?
- To what extent does the selection of new entrants happen knowingly? Is there such a working model, which supports young people from being a trainee to being in the position of a long-term employed associate, and also constitutes a guarantee for the companies?
- Do the soft skills affect the selection of the trainee/associate to be, and if yes, how is it measured? An additional important question is, whether the undertaking has a plan for developing these competences?
- How close is the cooperation between the market participants on the way from traineeship to becoming an associate?

5. The characteristics of the reference population

This article shows the partial results of a larger research, the original questionnaire, concerning the analysis of the practical side of vocational training contained ten questions. The fifth and sixth questions were about the selection of the

new workforce and the skills possessed by the workforce, both of which were able to be estimated on the basis of twenty one variables by the respondents. This article contains the results of their answers.

The reference population could be characterised by various types of statistical criteria. The variables in the questionnaire could be considered primarily as qualitative criteria. One of the group of the variables was nominal, equal, while the other group was ordinal and rankable. In the cases of the fifth and sixth questions the factors of the selection of new entrants and their possessed skills were to be estimated by twenty one variables on a qualitative and ordinal scale.

The pattern received on the basis of the analysis factors could not have been taken as representative by any of the testing variables, also the size of the pattern did not allow the conclusion, based on the pattern, to be expanded and generalised to the whole reference population. In correspondence with this, the results are only valid for the given pattern, also there was only a point-estimate calculated for the value of the variables on the basis of the analysis factors, on the given confidence level the upper and lower limits of the usual confidence intervals could not have been determined.

The questionnaire was filled out by 54 respondents, but not all the responses were completed. 66,67% (36) of the respondents answered every question, 16,67% (9) filled out only the first page, 9,26% (5) the first two pages, and 7,41% (4) answered the questions on the first three pages.

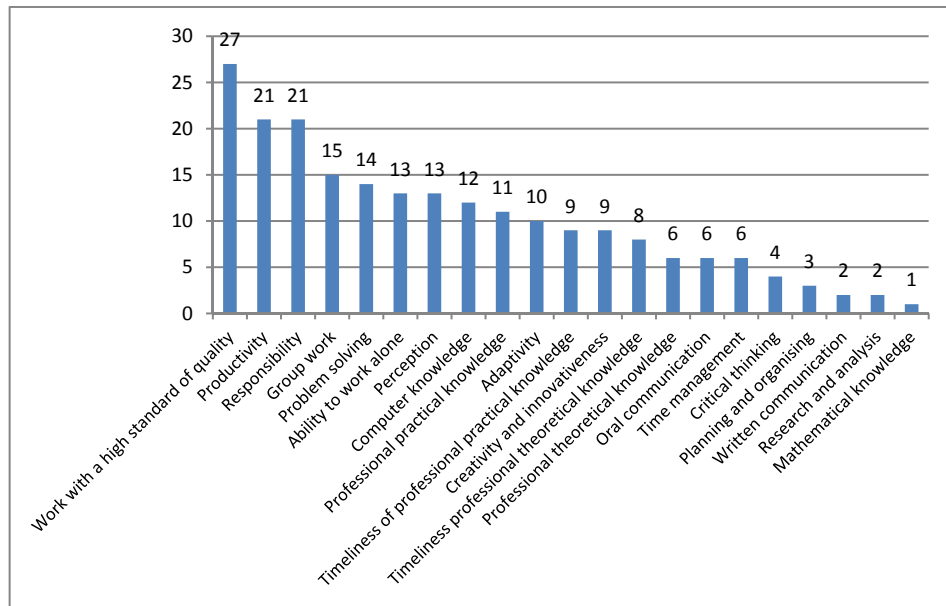
The fifth question was about determining the importance of the factors affecting the selection of the new workforce. The respondents were asked to determine on a four scale basis, in the case of the twenty one variables which of them were: not important, important, very important, or indispensable by the selection of new workforce. Due to the large number of variables, the combined representation of the results would have made it impossible to deduct conclusions, so the evaluation of the variables and their order of importance, based on their frequency, are shown on four different figures.

It has to be pointed out that the willingness to respond, considering the former questions could be considered favourable because three fourth of the respondents gave evaluable answers, the ratio of those who did not answer were between 24,07%-27.78% (13-15 undertakings).

By the selection of new workforce as a crucial factor (Figure 2) on the basis of frequency the most important thing is precise work with a high standard of quality, which was selected by 27 undertakings, also the productivity (effective performance of tasks) and responsibility for one's own work and decisions (21-21).

15 respondents selected as indispensable the ability for group work, 14 of them selected problem solving, and 13-13 of them selected the ability to work alone alongside with perception. 12 respondents thought computer knowledge to be paramount, which was followed by professional practical knowledge (11) and adaptivity, the ability of being able to adapt to new situations.

Figure 2. The indispensable factors by the selection of new workforce

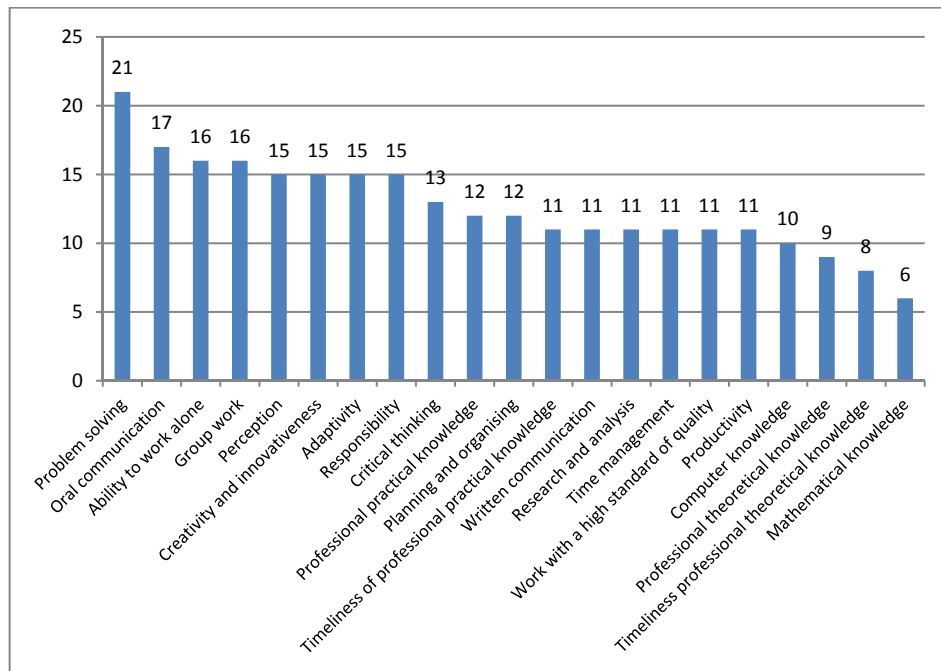


9-9 undertakings thought the timeliness of professional practical knowledge to be essential, also creativity and innovativeness. The timeliness of the professional theoretical knowledge were paramount for 8 respondents. 6-6 of them ranked as highest the professional theoretical knowledge, the oral communication and the time management, which was followed by critical thinking (4), planning and organising (3), written communication and research, analysis (2-2). Having mathematical knowledge was not considered essential by the respondents, only one of them selected it into this category.

In the first place of *very important* factors was problem solving, which was selected by 21 undertakings. The next factor was oral communication (17), then the ability to work able and group work (16-16). Perception, creativity and innovativeness, next to adaptivity and responsibility were all very important for 15 undertakings. Critical thinking was chosen by 13 respondents, professional practical knowledge and planning, organising were chosen by 12-12 participants. The next 6 factors were very important for 11 participants, these were the timeli-

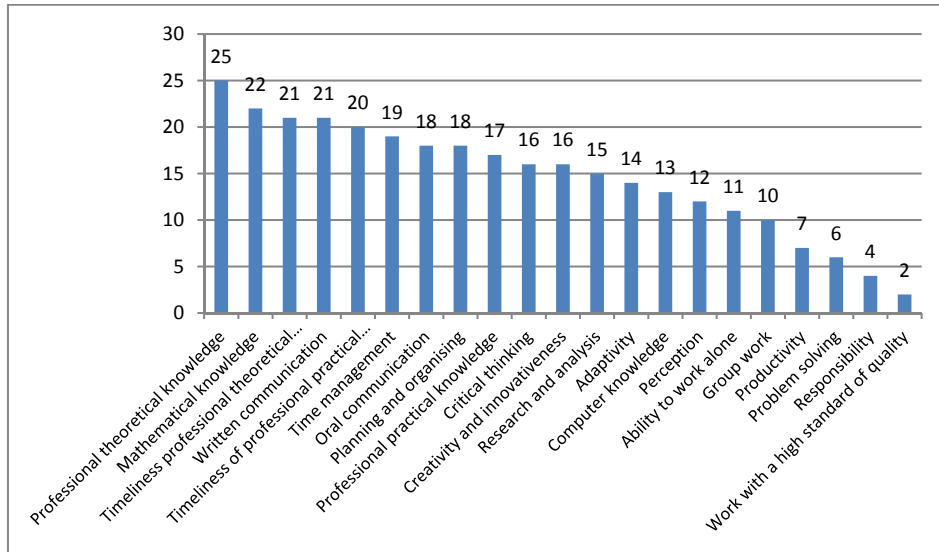
ness of the professional practical knowledge, written communication, research and analysis, time management, work with a high standard of quality and productivity. For less than one fifth of the undertakings was computer knowledge (10), professional theoretical knowledge (9), the timeliness of professional theoretical knowledge (8) and mathematical knowledge (6), which was again at the end of the ranking in this category as well, very important.

Figure 3. The *very important* factors by the selection of new workforce and their ranking



On the basis of Figure 4, one third of the respondents considered the following factors *important* by the selection of new workforce: professional theoretical knowledge (25), mathematical knowledge (22), timeliness of professional theoretical knowledge and written communication (21-21), and also the timeliness of professional practical knowledge (20). These are followed by time management (19), oral communication and planning and organising (18-18), professional practical knowledge (17), and finally critical thinking, creativity and innovativeness (16-16).

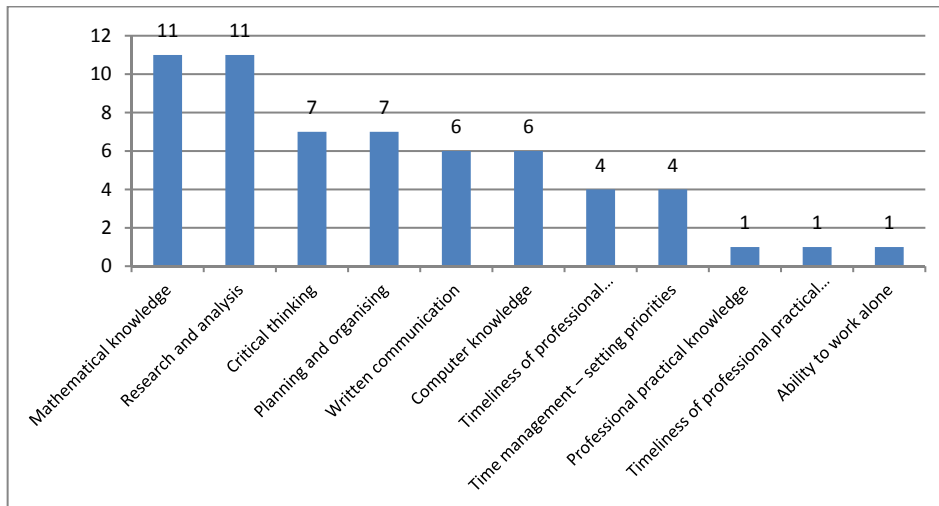
Figure 4. The important factors by the selection of new workforce



Less than 25% of the respondents thought research and analysis (15), adaptivity (14), computer knowledge (13), perception (12), ability to work alone (11), and group work (10) to be important. These were followed by productivity (7), problem solving (6), responsibility (4) and work with a high standard of quality (2).

On the other end of the ordinal scale, measuring the factor S affecting the selection of new workforce, was the category, which was thought to be *not important* by the respondents (Figure 5).

Figure 5. Factors, which were not at all important by the selection of new workforce



From the given 21 variables, 10 were not ranked by the respondents into this category, so it could be stated that these skills are important by the selection of new workforce. Those skills, which were not selected here are the following: professional theoretical knowledge, oral communication, perception, problem solving, group work, work with a high standard of quality, productivity, creativity and innovativeness, adaptivity, and responsibility.

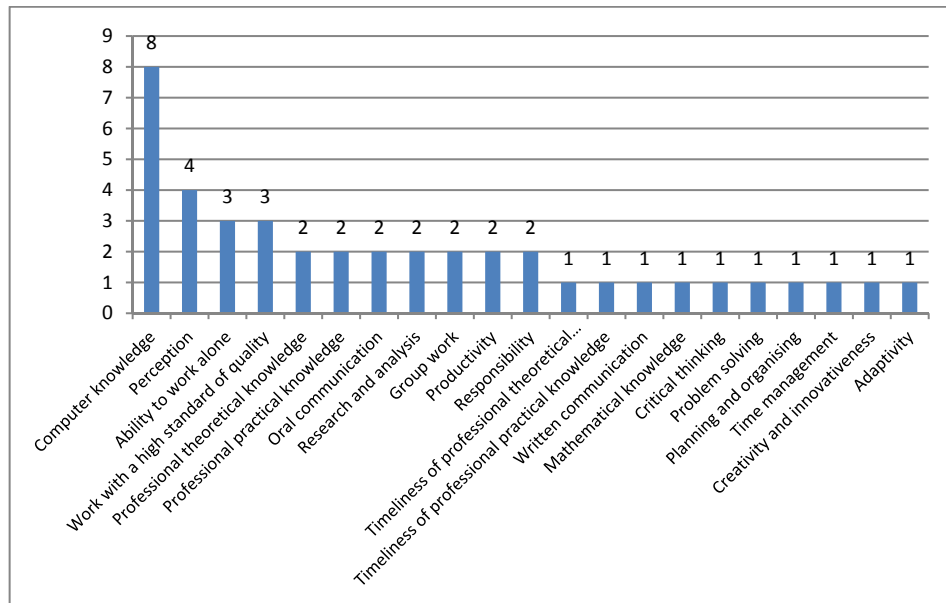
11 respondents thought mathematical knowledge, and research and analysis to be not important, 7-7 of them thought the same about critical thinking and organising. 6-6 undertakings selected written communication and computer knowledge, 4-4 time management and the timeliness of professional theoretical knowledge. Only one respondents selected professional practical knowledge and its timeliness as not important, and another one the ability to work alone.

The highest value of frequency connected to variables from the *not important* category was 11, which is 20,37% of the respondents, so basically one fifth or less of the participants ranked the variables into this category.

The relatively low value of the occurrences connected to certain variables on the basis of the pattern, and the fact that almost half of the given variables were ranked into this category means that by the selection of a new workforce a combined effect of multiple factors predominate, and also that these factors of the choosing process, based on the employers' unique characteristics, can actually be ranked.

The sixth question of the questionnaire could be taken as the follow-up of the fifth one. It contains the same 21 variables like the former question, but here the respondents had to decide whether the new entrants to the labour market possess the aforementioned skills. They were able to choose from the following categories, measured on the ordinal scale: they are confident about their skills, they possess it on a user level, they have them on a basic level, or they do not have them at all. Figure 6 summarises the skills, about which the new entrants are confident.

Figure 6. New entrants to the labour market are confident about the following abilities

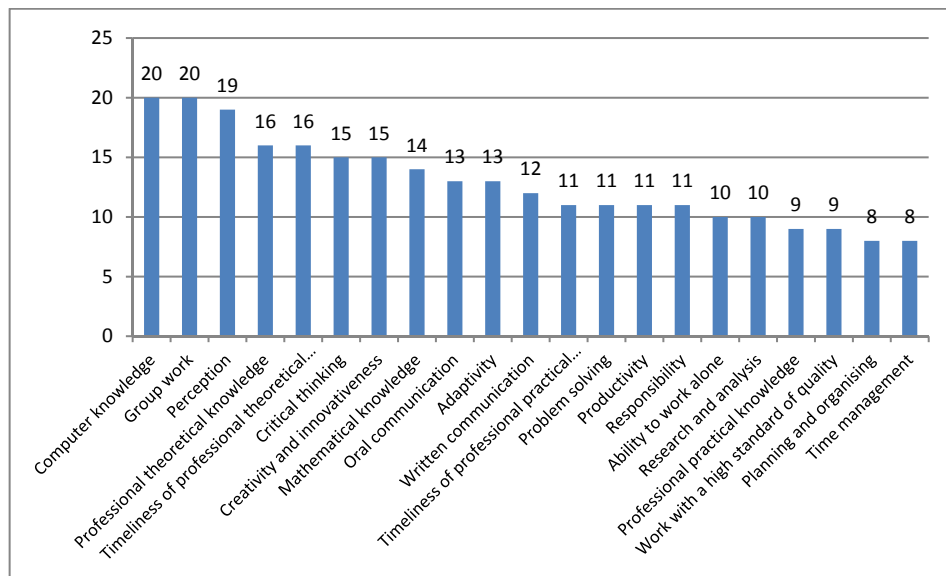


The highest frequency rate belongs to computer knowledge; this was ranked into this category by 8 undertakings. The next criterion was perception, which was selected by 4 respondents, and then 3-3 of them selected the ability to work alone and work with a high standard of quality. 2-2 of the undertakings ranked the following seven variables here: professional theoretical and practical knowledge, oral communication, research and analysis, group work, productivity and finally responsibility. The remaining 10 variables (timeliness of professional theoretical, practical knowledge, written communication, mathematical knowledge, critical thinking, problem solving, planning and organising, time management, creativity and innovativeness, adaptivity) were only selected by 1-1 respondents as skills, about which the new entrants are confident. On the basis of Figure 6 it could be stated that only 1,85% and 14,81% of the undertakings asked, experienced the aforementioned competences as to be possessed confidently by the new entrants.

The criteria mentioned above could also have been ranked into a category, containing the skills possessed by the new entrants on a *user level*. The highest frequency rates, like in the former category, belong to computer knowledge (20), but same frequency rates belong to group work as well. Perception was selected by 19 undertakings for this position and professional theoretical knowledge and its timeliness were by 16-16 undertakings. 15-15 respondents selected critical thinking, and also creativity and innovativeness. Mathematical knowledge was ranked as skills possessed on a user level by 14 companies, oral communication and adaptivity by 13-13 of them. 12 undertakings selected written communication into this category,

while 11-11 of them thought that the timeliness of professional practical knowledge, problem solving, productivity and responsibility belong here. The ability to work alone, research and analysis, professional practical knowledge, work with a high standard of quality, planning and organising and time management were only experienced as user level skills by one fifth of the undertakings asked.

Figure 7. New entrants to the labour market possess the following skills on a user level

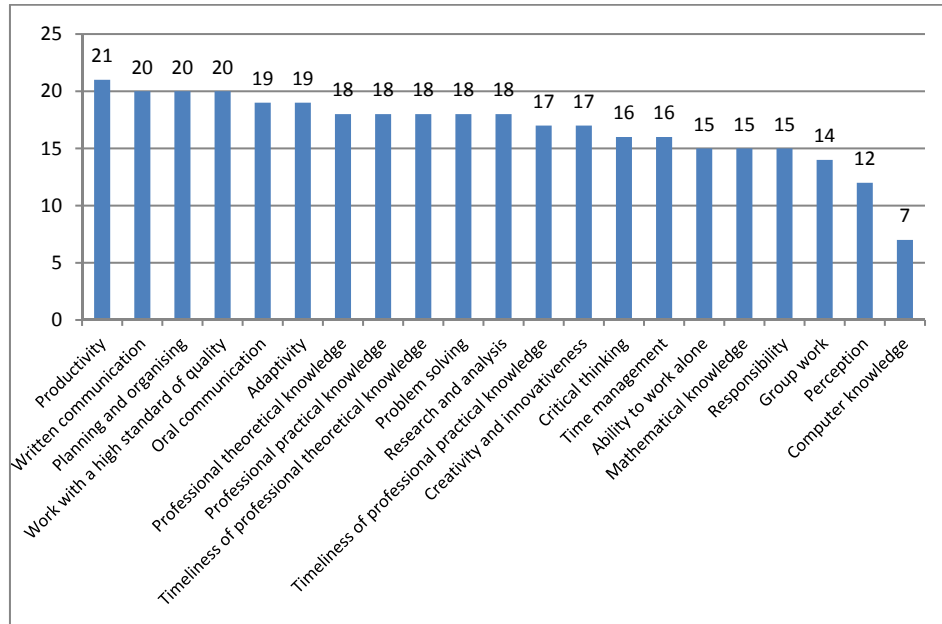


Frequencies in the next category show a more balanced picture; approximately one third of the undertakings asked agreed on the fact that the given skills are possessed on a basic level by the work force (Figure 8).

Approximately 35%-38% of the respondents (21 companies) selected productivity into this category, written communication, planning and organising, and work with a high standard of quality were chosen by 20-20 of them, and written communication and adaptivity by 19-19 of them. 18-18 of the companies deemed the following skills as possessed only basic level by new entrants: professional theoretical and practical knowledge, timeliness of professional theoretical knowledge, problem solving and research and analysis.

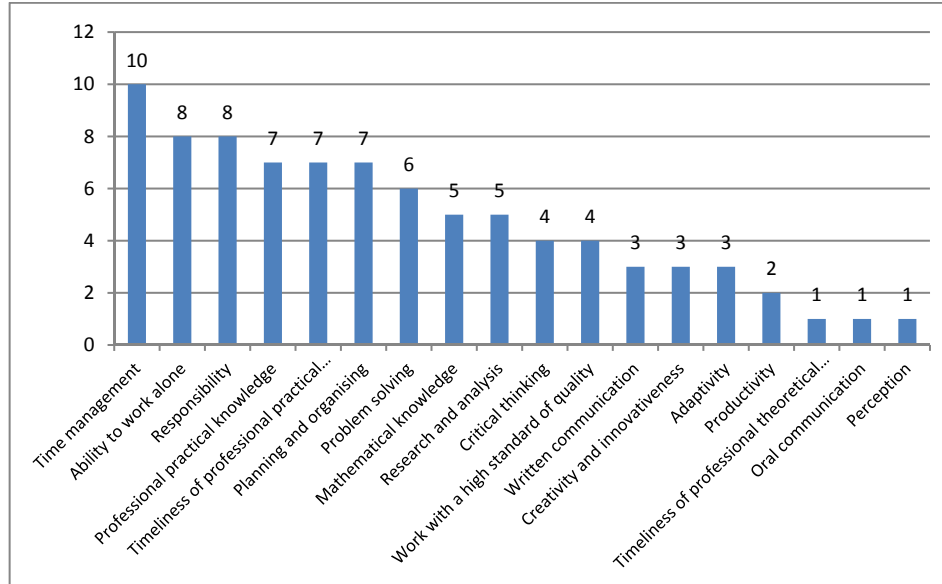
Approximately 30% or less (17-17 companies) thought that the timeliness of the professional practical knowledge of new entrants, their creativity and innovativeness were on a basic level, also 16-16 of companies ranked critical thinking and time management here. The ability to work alone, mathematical knowledge and responsibility were selected by 15-15 respondents. The frequency of group work was 14, perception's was 12, and computer knowledge's was 7, which seems to support that employers are usually satisfied with the computer skills of new entrants.

Figure 8. New entrants to the labour market possess the following skills on a basic level



The other end of the scale measured the skills lacking by new entrants to the labor market on basis of the given criteria, the results are shown on Figure 9.

Figure 9. New entrants to the labour market do not possess the following skills at all



From the 21 variables three were not ranked into this category, these were the computer knowledge, professional theoretical knowledge and group work, the ability to cooperate with others. Ten of the respondents thought that new entrants to the labour market do not possess the skills of time management at all, 8-8 of them thought the same about the ability to work alone and responsibility, 7-7 undertakings found the professional practical knowledge and its timeliness to be lacking, and planning and organising as well. Six companies were missing the ability of problem solving, 5-5 of them though the same about mathematical knowledge, and research and analysis. The lack of critical thinking and work with a high standard of quality was selected by 4-4 undertakings, while 3-3 of them did the same with written communication, creativity and innovativeness and adaptivity. Two respondents ranked productivity into this category and 1-1 the timeliness of professional theoretical knowledge, oral communication and perception.

Conclusions

On the basis of the examination of the literature and the empirical research we can summarise our experience with the following conclusions: the most popular means were the providing of apprentice work placement, which was granted by 24 undertakings, this was followed by the ensurance of the visiting of companies (10 undertakings granted this), and the support of theoretical education (7 of them). 6-6 of the undertakings granted training opportunities, and three of them granted scholarships for the employees' skills development.

The research has shown that undertakings employed on average 1-3 new employees in the past year and this trend will remain in practice for the current year as well. The surveyed undertakings primarily employ university interns for a mean duration of either a quarter or more than a quarter.

The exploration of the cooperation between the participants of the labour market appeared in our research as an important research question. In our work the Work Center, the Hungarian Chamber of Commerce and Industry, Széchenyi István University, and the secondary education establishments and trade organizations (e.g. IPOSZ, VOSZ) were named, those which show an increasingly close cooperation both in the selection and the recruitment of labour. The increasing role of the Hungarian Chamber of Commerce and Industry was confirmed by our research as well.

As an analysis of the factors affecting the selection of new workforce, the survey was measuring both the professional (hard) and the non-professional (soft) competence. We were curious whether the hard or the soft skills played a more influential role.

Most of the undertakings considered the following factors as the most important competences: the precise work with a high standard of quality, productivity (effective performance of tasks), and taking responsibility for one's own actions and decisions. The soft skill competences, like the ability for group work, problem solving, working alone and perception also appeared as important factors. All these were followed by the existence of computer knowledge and professional practical knowledge, which for us clearly demonstrates the dominance of the soft skill competences against hard skills.

It was interesting to perceive that in the survey the ability for working alone was to be found at the end of the ranking, which could be due to the fact that the companies would like to shape their apprentices and new entrants according to their own image in the beginning and only later will the ability to work alone become an important competence.

By surveying the competences lacking by new entrants to the labour market, we could state that the greatest deficit is showing in the case of soft skills. The companies find themselves to be facing young people with lacking abilities, which do not show the lack of their professional knowledge, but the lack of their skills in time management, communication and organising.

The means how the undertakings support the development of the employees' competences are the following: the most popular means were the providing of apprentice work placement, which was granted by 24 undertakings, this was followed by the ensurance of the visiting of companies and the support of theoretical education. Only few of the undertakings granted training opportunities, and only three of them granted scholarships for the employees' skills development.

As a conclusion of our work, we determined that the appearance of participants of the vocational training policy of education and the participants of the market should deserve a higher recognition in education concerning the future. The harmonisation of the guidelines set by the market participants and the professional support of education policy is also one of the crucial tasks of the near future. If this cooperation continues in a successful manner, then all participants will benefit success. Undertakings will receive such professionals, with whom their companies' income and value will grow, the government will be able to reduce the unemployment rate by producing fitting professionals by its education system for areas which need them, and the employees will benefit as well because they will be able to be valuable and successful parts of society.

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Evolution of entrepreneurship and entrepreneurship education – the case study of Extremadura Region in Spain

Martin Gomez-Ullate Garcia de Leon & Luis Ochoa Siguencia

Introduction

A critical review shows what has been the advance in the field of Entrepreneurship Education in Europe from the establishment of the Oslo Agenda in 2006 centering in three dimensions: research, educational and political implementation and social impact. The Council of Europe's report "Entrepreneurship Education: a road to success" concludes that "students participating in entrepreneurship education are more likely to start their own business and their companies tend to be more innovative and more successful than those led by persons without entrepreneurship education backgrounds. Entrepreneurship education alumni are at lower risk of being unemployed, and are more often in steady employment. Compared to their peers, they have better jobs and make more money". We will try to measure and test these conclusions in a regional case study (Extremadura in Spain). Desk research has been conducted to go beyond a state of art, highlighting, from a critical approach, key questions on intercultural issues about entrepreneurship and entrepreneurship education. In the context of a case study (the region of Extremadura in Spain) quantitative and qualitative data are integrated into the analysis. Qualitative methods included participant observation.

Entrepreneurship Education (EE) is from the last decade and on a priority in the agenda in most EU Member States and for the Commission. A wide variety of programmes and activities exist across Europe. The question that arises is whether these education and training effort has resulted in a more entrepreneurial Europe.

We will centre in a regional case study, the Autonomous Community of Extremadura to know how EU policies and directions are implemented and developed. This will lead us to reflections about the barriers, burdens and cultural factors that makes EE a challenge and still not a reality.

1. Methodological aspects

First of all, we will characterise the definition framework of the concept and semantic family of Entrepreneurship Education. Through desk research we will analyse the progress in policies and case studies in the European Union (EU). Finally, we will focus in the case study of Extremadura to test and update the state of EE in the region, to answer and raise questions about sociocultural factors that delay its development.

We will analyse subjects and competence in graduate and postgraduate programs to know how the university, the most important source of teachers in Extremadura Schools.

The Global Entrepreneurship Monitor (GEM) a thorough international survey assessing entrepreneurship and EE in more than 100 countries, is a rich source of data and historic trends that will serve for the analysis.

2. Entrepreneurship Education: a complex reality

“Entrepreneurship Education”, “Entrepreneurial Education”, “Education for Entrepreneurship” are different terms for a complex field of education. Related concepts are “Enterprise Education”, “Intrapreneurship Education”, “Self-oriented Entrepreneurship”. The extension of Entrepreneurship Education (EE) in the educational cycle (from primary to postgraduate education) and of its scope that goes beyond “doing business” and the enterprise world, “to develop a general set of competences applicable in all walks of life at home and in society, not simply about learning how to run a business” [European Commission, 2013] makes it a complex duty to agree on a single definition. More adequately we can set a framework to understand its complexity,

Mindsets, generic attributes, skills

Entrepreneurship refers to an individual’s ability to turn ideas into action. It includes creativity, responsibility, independence, resourcefulness, perseverance, sense of initiative, innovation and risk-taking, as well as the ability to plan and manage projects in order to achieve objectives. The entrepreneurship competence includes, therefore, transversal skills and attitudes as well as more specialised knowledge and business skills. These more specialised skills and expertises have been described in the field of sports management studies as “entrepreneurial processes, traits and behaviours, business foundations, communications and interpersonal skills, digital skills, economic literacy, information management and operations management” [Jones, Jones, 2014, p. 719]. Moreover, EE should involve learn to understand entrepreneurship, learn to become entrepreneurial and learn to become an entrepreneur [Hytti, 2002].

Other approaches, as coaching, link entrepreneurship with vocation. EE would foster the capacity of people to accomplish their desires or dreams, or as it says an advertisement, “to earn a living from your own freedom”.

The European Commission [2013] extends the need to develop entrepreneurial skills “from nursery school right through to higher education”, but going further, as a specially adapted subject for lifelong learning and non-formal education, we can say EE is certainly available for all our life.

Entrepreneurship education is often taught by “learning-by-doing” approaches as Project or Problem Based Learning (PBL), inquiry-driven approach, involving team dynamics, peer learning, brainstorming and communication techniques.

There are also different approaches to assess and measure the EE effects on students, countries and regions. Some of the key questions or indicators that give us a picture of EE implementation and effects are:

- % of students participating in EE programs in school.
- Number of subjects, fields, competences in school programs.
- Share of people considering self-employment as its first choice.
- Total Early-Stage Entrepreneurial Activity (TEA) representing the percentage of 18-64 population who are either a nascent entrepreneur or owner-manager of a new business (during the last 42 months).

There are other effects of EE that could be also measured since it has been proved that among other things, entrepreneurship education has reduced bullying and had a positive influence on teachers’ attitudes and their development as human beings [Mattila, Rytikölä & Ruskovaara, 2009].

3. Entrepreneurship Education in the European Union

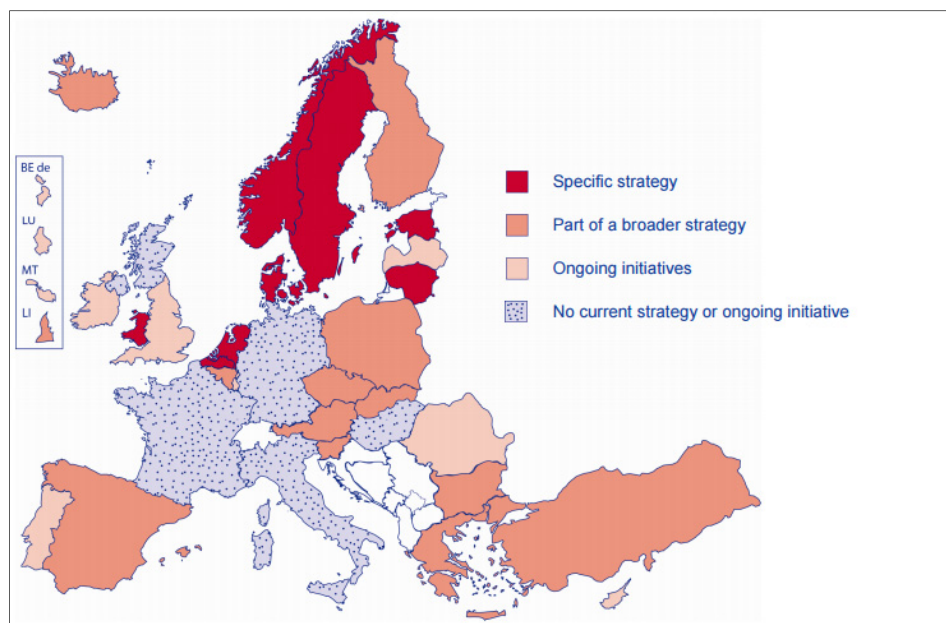
In the last fifteen years, there has been in the EU a growing awareness of the importance of Entrepreneurship Education, and a growing and sustained effort for its implementation in all member countries. Awareness and effort have become more important in a context of economic recession, job losses and skills mismatches. Within the education and training agenda, the strategic framework for European cooperation, Education and Training 2020 has, as its fourth long-term strategic objective, to enhance creativity and innovation, including entrepreneurship, at all levels of education and training [European Commission/EACEA/Eurydice, 2012a]. To reach higher levels of employment, an action plan has been set up based upon three pillars: developing entrepreneurial education and training, creating the right business environment, role models and reaching out to specific groups. Despite being a permanent priority in the Com-

mission agenda, program after program since the 90s, in 2004, the Final report of the Expert Group “Education for Entrepreneurship” entrepreneurship was normally “neither required nor promoted” in the member states’ Education Systems [European Commission, 2004]; a 2011 European Commission report, less than 5% of young people in Europe participate in entrepreneurship education in school. and in 2015 we still find serious gaps and differences in its curricular implementation.

According to Mattila, Rytölä & Kerhokeskus [2009], teachers have shown problems to fully understand and accomplish their tasks as EE initiators, translated into insecurity not knowing what to do and how to do it right.

Even when it is contemplated as one of the key competences and it has been incorporated in the national curricula and other steering documents, and although progress has been accomplished in defining learning outcomes and assessment tools [European Commission/EACEA/Eurydice, 2012b], the Key Competence Network on School Education (KeyConect) have found out that no European country has still really made the shift towards competence education and that teacher training, student assessment and learning environments and resources are still needed.

Figure 1. National/regional strategies and initiatives to the implementation of entrepreneurship education into general education (ISCEDy 1-3, 2011/12)



Source: [European Commission/EACEA/Eurydice, 2012a].

Recent education reforms in Norway and Sweden have explicitly brought entrepreneurship education to the forefront aiming to bring students into closer contact with the world of work and business life, and to connect learning with real life working situations.

On line with former reports' recommendations about measures of incentive and support for schools and teachers for their large degree of autonomy in the teaching process and space, in Sweden efforts have focused in "providing in-service training for teachers, counsellors and head teachers to equip them with the basic attitudes and skills necessary to work on entrepreneurial activities in schools" [Kearney, 2013, p. 28].

The Flemish Community of Belgium launched the Action Plan for Entrepreneurship Education 2011-2014 to prepare students for self-employment as well as providing teachers with the training needed to help them create positive attitudes towards entrepreneurship and self-employment. According to In other European countries different strategies Ireland, NCCA has developed a senior cycle short course on enterprise which is currently being discussed with education stakeholders before implementation, and in Estonia, from September 2013 'Economic and business studies' will be offered as an optional separate subject in all secondary schools. [Kearney, 2013, p. 29].

Another example of the increasing importance given to entrepreneurship in education in Europe is ASDAN's recognition of entrepreneurial skills as one of the cross-curricular "effectiveness skills" it assesses in students working towards the CoPE (Certificate of Personal Effectiveness).

International comparative statistics show that since 2004, the share of people preferring self-employment to being an employee has dropped in 23 out of the 27 member states. In 2010, for EU the average raised to a 45% of people stating self-employment as a first choice. In 2013 this average had descended to 37%, while in USA reached 51% and in China, 56%.

Figure 2. Specific learning outcomes for entrepreneurship education in primary (ISCED 1) and general secondary education (ISCED 2-3), according to central steering documents, 2011/12



Source: [European Commission/EACEA/Eurydice, 2012a].

4. Entrepreneurship Education in Extremadura

In Spain, the implementation of EE is part of a growth strategy intended to promote entrepreneurship and innovation to dynamise economy. There are national and regional efforts to promote actions to boost and promote entrepreneurship initiatives and an entrepreneurial environment but there is a patent absence of EE in primary and secondary education curricula and schools. This situation is starting to shift for since 2014/15 it is obligatory for schools to offer a new elective subject on “professional guidance and entrepreneurial initiative” in the 4th grade of lower secondary schools.

For the Autonomous Community of the Extremadura, the Figure 2 also does not fit with the regional reality. In the present educational programmes of University of Extremadura’s Teacher Training College and Faculty of Education, out of 32

compulsory and 9 voluntary, not a specific subject can be found in Entrepreneurship Education in the degree of Primary Education, nor is EE mentioned in the competences to be acquired by the students. Same thing happens in the degree of Primary Education. In the degree of Social Education the closest compulsory subject that we find is “Socioeducational Projects for personal, family and societal development” and two voluntary subjects: “Rural development”, and “Cultural management”.

Taking in account that most of the teachers of the educational system in Extremadura working in public and private schools have been trained in the University of Extremadura, we can agree that little or nothing is being done in schools for EE. This hypothesis is confirmed by the Global Entrepreneurship Monitor (GEM), concluding that no sufficient and adequate knowledge have been taught about the principles of a market economy nor stimulated creativity, self-reliance and entrepreneurship.

5. Entrepreneurship and culture

Entrepreneurship deals with personal characteristics. Successful entrepreneurs lives are often explained as if such people entered the world with an extraordinary genetic endowment. Films as *Wall Street* (Oliver Stone, USA, 1987), *The wolf of Wallstreet* (Martin Scorsese, USA, 2013), show us strong personalities and unscrupulous characters behind the figure of the limitless outlaw entrepreneur.

The Spanish film, *Casual Day* (Max Lemcke, 2007) show us a different understanding of progression in business and success of life, ironising with the value of working hard to succeed, and the interpretation of American Enterprise Culture in Spanish cultural context. “The literature suggests many factors unrelated to genetics and support the counter paradigm that »entrepreneurs are often made, not born«” [Garavan, 1994]. Entrepreneurship is a social undertaking and must therefore be studied within a context of social system that help us refine and compare some cultural contexts more or less enterprising and to some extent, used to measure the effects of EE [Mattila, Rytkölä & Ruskovaart, 2009].

As shown in Figure 1, the countries which have already launched specific strategies for entrepreneurship education are mainly located in Northern Europe. Weberian connexions between religion, culture, capitalism and spirit of entrepreneurship are easily imagined.

GEM 2014 survey has interesting figures comparing Extremadura with Portuguese Alentejo and Centro (the three regions conforming EuroAce). From example, Gender differences in TEA are relevant between Centro (3,61% women, 11,02% men) and Extremadura (4,61% and 6,85%, respectively).

Conclusions

In Spain, the economic crisis has shown people the emerging shift in the labour culture and market from public stable jobs and paid employments to a self-employment, work by project labour culture. But the former model that has been predominant during the last centuries is still supported by different stakeholders' interests (labour unions, public administrations, preparing candidates, etc.).

History and stories of EE implementation in Europe show cultural differences affecting the degree of development beyond its curriculum inclusion. Despite the level of advance that some studies confer to Spain, in Extremadura there is still a long way to go, mostly in what concerns EE for primary and secondary schools. Curriculum absence as well as GEM survey confirm these points.

This structural sociocultural differences will persist in the next years making very different speeds and degrees of spreading and accomplishment of Entrepreneurship Education.

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About project



University
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UNIVERSITÄT
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NTNU – Trondheim
Norwegian University of
Science and Technology

The publication and conference were prepared within the project **"Inter Uni. Boosting internationalisation. Strengthening relations between the university, candidates, students, alumni and employers with the use of new media"**.

The main aim of the project is to facilitate the process of internationalisation with the use of new media and support from the project partners: University of Liechtenstein and Norwegian University of Science and Technology. Cooperation between partners includes exchange of good practice and transfer of innovative solutions.

The project objectives include:

- organising conference "New media and higher education – opportunities and threats" for academic and administrative staff of the universities from all over the world,
- improving competences and skills of the administrative and academic staff of the universities through trainings and workshops on the use of new media and constructing professional promotion strategies
- launching an online platform and app "International Ambassadors" for international alumni and professors to represent and promote University of Economics in Katowice in their home countries,
- preparing a mobile application to create a positive and modern image of the University among candidates and students,
- preparing a responsive version of the University web site,
- adjusting university web site to the needs of the visually impaired users.

Beneficiaries of the project are administrative and academic staff of the universities involved in the project, including the partner universities from Silesian Universities Network (SUN), as well as Polish and international students, candidates and alumni.

Project is financed with the EEA and Norway Grants



www.eeagrants.org



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University
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International Conference
New Media and Higher Education
- opportunities and threats

15-17 June 2015, Katowice

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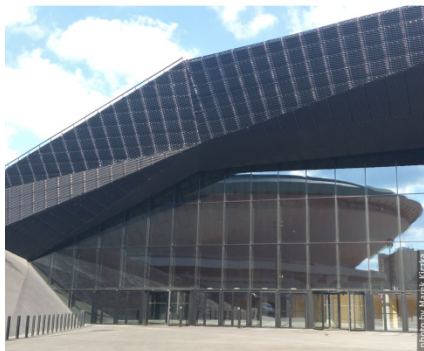


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PUBLISHING HOUSE OF THE UNIVERSITY OF ECONOMICS IN KATOWICE

NEW TITLES



Services in Europe – diagnosis and development perspectives

Magdalena Jaciow, Beata Kolny, Grzegorz Maciejewski, Barbara Mikołajczyk, Robert Wolny

The objective of this monograph is the description of the state of service market in selected European countries, the diagnosis of determinants of service market, as well as defining the directions of service market in Europe in 2020 perspective. The content of the monograph is divided into three chapters. Services as research subject, source approaches of studying services as well as the methodology of conducted research in Europe were characterized in the first chapter. The second chapter demonstrates the results of the desk research. Information on the demographic-economic features of European societies was included in it, as well as service sector in European countries was characterized. The functioning of the service enterprises in Europe was also presented. The results of field research were presented in chapter three. Scientific publication, p. 128, ISBN 978-83-7875-254-7.



The retail trade in Europe – diagnosis and future perspectives

Barbara Kucharska, Michał Kucia, Grzegorz Maciejewski, Mirosława Malinowska, Agata Stolecka-Makowska

The objective of this study is the diagnosis of retail trade functioning in Europe and an attempt to outline perspectives and directions of development of this economic sector. The report constitutes a complex study of retail trade, retailers and retail chains functioning in Europe and its selected countries. The study consists of three chapters, the first of which is of a theoretical-methodological nature, and two remaining ones are empirical. The theoretical-methodological aspects of studying retail trade in Europe were demonstrated in the first chapter. The second chapter contains the characteristics of retail trade in Europe, prepared on the basis of secondary sources of information. The third chapter is devoted to the attempt of recognition of the functioning of retail trade in selected European countries. Scientific publication, p. 157, ISBN 978-83-7875-255-4.



Social exclusions in Europe. Marketing perspective

Eds. Sławomir Smyczek, Justyna Matysiewicz

Social exclusion is a concept used in many parts of the world to characterize forms of social disadvantage. It refers to processes through which individuals and entire communities of people are systematically blocked from rights, opportunities, and resources that are normally available to members of society and that are key to social integration. Social exclusion is driven by a complex interplay of demographic, economic, social and behavioral factors that are linked and mutually reinforcing. The aim of the book is present a detailed analysis of the phenomenon of social exclusion in Europe. This phenomenon is analyzed with respect to its sources, level and structure and touch different types of exclusions, including: homeless, immigrant, handicapped, digital, sexual and financial exclusions. The entire publication is divided into four parts. Scientific publication, p. 277, ISBN 978-83-7875-240-0.

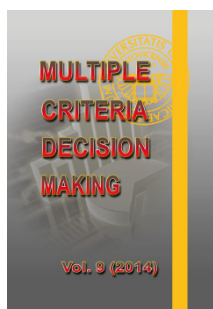


PUBLISHING HOUSE OF THE UNIVERSITY OF ECONOMICS IN KATOWICE

SCIENTIFIC JOURNALS



Journal of Economics and Management (JEM) was founded at the University of Economics in Katowice in 2003. It is a peer-reviewed quarterly committed to publishing theoretical and empirical research articles that explore current issues, trends or debates in the fields of management, economics and finance. JEM encourages innovative methodological approaches, including qualitative studies or literature reviews. The Journal of Economics and Management aim is to advance scholarly understanding of the economy and management by publishing value-added theoretical and cutting-edge empirical articles. It is also designed to provide an ongoing forum for academic researchers to exchange information, insights and knowledge on both theoretical development and empirical research in the field of social sciences. ISSN 1732-1948.



Multiple Criteria Decision Making (MCDM) journal was founded at the University of Economics in Katowice in 2011. It is a continuation of a book series entitled *Multiple Criteria Decision Making*, edited by Tadeusz Trzaskalik and Tomasz Wachowicz and issued by the Publishing House of the University of Economics in Katowice since 2005. MCDM is a double-blinded-reviewed annual that explores the entire process or the selected elements of the multiple criteria decision making. It offers prescriptive as well as descriptive and normative viewpoints on the decision making. In addition to theoretical and empirical research, the journal presents real-world applications, case studies and the software developments that support MCDM problems. ISSN 2084-1531.

Nowadays, higher education institutions must use ICTs in ways that reconfigure access to information, people, services and technology itself. New media can enhance programs in distance education, can attract traditional courses as well can improve communication inside and outside university. But it is still open question as to whether they will be designed and used in ways that enhance the learning activities of individuals, classrooms, library, administration and university as a whole. The success of new media implementation in higher education are enabling the restructuring of universities in ways that might support, undermine or restructure traditional campus-based institutions of higher education and blur boundaries between remote and campus-based practices and institutions.

The purpose of the initiative has been the publication of the discussions which took place during international conference on New media and higher education – opportunities and threats organised within the project “Boosting internationalisation. Strengthening relations between University, candidates, students, alumni and employees with the use of new media” by University to Economics in Katowice.

Project financed with the EEA and Norway Grants.



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