Cytowanie/quotation:

D. Kaźmierczak, *Modern Solutions in Educational Organizations* [in] *red. S. Kowalkowski, Public Organisations Management,* AON 2014, ISBN 978-83-7523-325-4 str./p. 62-74

mgr Danuta Kaźmierczak
Wydział Zarządzania i Dowodzenia AON
Doktorantka 1 roku

MODERN SOLUTIONS IN EDUCATIONAL ORGANIZATIONS

NOWOCZESNE ROZWIĄZANIA W ORGANIZACJI EDUKACYJNEJ

Streszczenie: Referat poświęcony jest zaprezentowaniu dociekań naukowych autora poświęconych metodom nauczania we współczesnym modelu kształcenia z uwzględnieniem uwarunkowań ich stosowania, a także zaproponowaniu zasadniczych kierunków zmian struktur (innowacyjności organizacyjnej) w postaci konkretnych rozwiązań usprawniających w efekcie proces kształcenia w organizacjach edukacyjnych

Abstract: The article presents scientific analysis on the teaching methods in the modern educational model and their practical applications, as well as suggestions for the main directions of structural changes (organizational innovation) to streamline an educational process in educational organizations.

INTRODUCTION

The 21st century clients expect their needs to be fulfilled better, faster and cheaper. Client satisfaction has become a strategic goal possible to achieve by offering the products and services of the highest quality. This rule applies also to educational organizations, which using the means of modern civilization: knowledge, technology and innovation try to enhance the quality of their educational offer. Knowledge management processes and modern educational model enriched with e-learning, blended learning using modern technology should increase dynamicity and flexibility of the whole educational process and sensitivity to the clients' need.

Society undergoes constant changes and evolution. Its elements are in interactions so may be analyzed in terms of particular features and development trends. Some of them are eliminated other are a driving force for development. The

description of information society in reference to earlier structures of agricultural and industrial society is presented in Table 1.

Features and development trends of three types of societies. Table 1.

Features and development trends	*Agricultural society*	*Industrial society*	*Information society*
Wealth	field	capital	**knowledge**
Basic product	food	Manufactured product	Information, data
Work	Close to home	Far from home	at home, telework
Transport	River, road	Railway, highways	Infohighways
Energy	Human , animal	Coal, steam, oil	Nuclear electricity
Extent of activity	local	regional	**global**
Entertainment	Folk, ritual	mass	Domestic, interactive
Secret	religious	political	commercial
Education	master	school	computer, **e-learning**

Source: J. Trajer, Zarządzanie wiedzą, PWE, Warszawa 2012.

Knowledge and information have supplanted classical production factors: field and capital to determine the progress of civilization and development of information society. Computers, digital data and network structures created the global business environment. This environment is world market oriented with regional characteristics, necessity to cooperate and compete in international network. In global economy the fast transfer of information and knowledge is crucial since modern technologies change the value of time and distance. Distant learning is becoming a new trend and a key component of educational system together with still so important master in tutoring and traditional school.

Growing importance of information technologies and scientific researches which need special skills makes the creativity the main value and contributes to developing of *creative class*. [1] This class is active in the fields of science, art, design, computer programming, media, problem solving and searching for new ones to be solved. The representatives of this class belong to *Y generation* and their motto is "three T" Talent, Tolerance and Technology.

Another consequences of the above-described changes are that never before was man forced to change decisions so often and adapt to constantly changing environment[2]. Since constant learning becomes a necessity, life-long learning should be a base of education and social life. Life-long learning that is flexible, diverse and available at different times and in different places, crosses sectors, promoting learning beyond traditional schooling and throughout adult life (i.e. post-compulsory education). It has "Four broad and mutually supporting objectives: personal fulfillment, active citizenship, social inclusion and employability/adaptability"[3].

[1] R. Florida http://www.thedailybeast.com/articles/2013/03/20/richard-florida-concedes-the-limits-of-the-creative-class.html (20.02.2014)

[2] Knowledge resources double every 6 years with strong tendency to shorten this time and possibilities of computers and the Internet double respectively every 18 and 12 months. (Moor's law)

[3] http://www.llcq.org.au/01_cms/details.asp?ID=12 (09.03.2014)

Legal basis of educational development:

- School Education Act of 19 August 2011 with the changes of law on educational system (J.L. 2011, No 205, item1206)
- Strategy for the Development of the Information Society in Poland until 2013 and perspective for transformation of information society to 2020.
- Act of 17 February 2005 on informatization of entities performing public tasks (J.L.2005 No 64, item 565 as amended)
- Act of 18 July 2002 on Providing Services Electronically (J.L. 2002, No 144, item 1204 as amended)
- Act of 6 September 2001 on access to public information (J.L. 2001, No 112, item 1198 as amended)
- Law of 27 July 2001 on database protection (J.L. 2001 No 128, item.1402)
- Law of 4 February 1994 on copyrights and related rights (J. L.1994 No 24 item 83)
- Act of 16 April 1993 on combating unfair competition (J.L.1993, No 04.96.959)

The educational organizations are to face the challenge and prepare the educational offer[4] to come up to expectations of all their clients and compete on a local and global market.

EDUCATIONAL ORGANIZATION

Law on higher education [5] defines educational organization as:

- *higher education institution - shall mean an establishment providing degree level education, founded in compliance with the procedures laid down in this Act;*
- *public higher education institution - shall mean a higher education institution established by the State, with the State represented by a competent authority or public administration body*
- *non-public higher education institution - shall mean a higher education institution established by a natural person or body corporate other than a State- or local authority-administered body corporate;*

For the analysis of educational processes [6] the educational organization should be defined as hybrid organization. During the process of creating the value it uses material and nonmaterial resources in various forms and typical of different organizations and companies. An educational organization based on knowledge can be also defined as intelligent organization, i.e. having ability to learn and adapt to environment for expected results. The intelligence of an organization implies collecting, storing and distributing infor-

[4] Educational offer fulfills requirements defined in Act of MNiSW of 2nd November 2011 on National frameworks of qualifications) in the range of theoretical knowledge, intellectual skills and social skills.

[5] http://www.nauka.gov.pl/en/law-on-higher-education/ (11.03.2014)

[6] Educational process consists of key processes, Learning, Teaching and Assessment. The order indicating the centrality of Learning and that all other processes are just facilitators of learning. http://www.unesco.org/new/en/education/themes/strengthening-education-systems/quality-framework/core-processes/ (9.03.2014)

mation, using modern technologies in educational process, searching for innovations mainly in the field of technology, methodology and management, adapting to changing conditions and tasks, providing comfortable working conditions, analyzing the market and quick identifications of clients' demands, managing finance effectively.

The key resource is knowledge so the processes of creating, modifying and transferring of knowledge determine the value of the organization. Introducing innovations in the very field should be beneficial. Innovation[7] can be defined as the process through which economic and social value is extracted from knowledge through the generation, development, and implementation of ideas to produce new or improved strategies, capabilities, products, services, or processes and involves using technology in new ways to create a more efficient organization and improve alignment between technology initiatives and business goals. Changes in one field trigger changes in others.

Innovation should make the organization more dynamic and flexible, which means implementing business process management[8]. Dynamic system involves optimizing single processes defined as a series of activities of transforming ideas and efforts of members of the organization into the effect expected by a client. To act dynamically the company must also be flexible – able to adapt the system to current situations. The processes must be simple and performed in the shortest reaction time possible.

The main business processes in the educational organization are the following: preparing the educational offer (a new or modified product), enrolment (information and marketing), teaching (lectures, classes, evaluation), additional products as creating image, providing additional offer and services, building up confidence.

The processes are efficient if there are right conditions: infrastructure, buildings IT systems, financial means. However, the quality of processes depends on : stakeholders (students, companies, teachers, workers) and non physical resources (knowledge and skills).

In educational organizations the key processes are the processes of collecting and enlarging the intellectual capital by conducting scientific researches and sharing, distributing knowledge (i.e. learning). These processes can be in different proportions depending on the character of organization, e.g. research institutes with no teaching processes, schools with teaching as a key process or organizations with both teaching and conducting research processes.

[7] http://searchcio.techtarget.com/definition/IT-innovation
http://www.conferenceboard.ca/cbi/innovation.aspx (03.03.2014)
[8] A. Stecyk, Wartość systemów e-learningowych w podmiotach edukacyjnych, Difin, Warszawa 2012r. s.110.

Successful innovative knowledge management[9] involves implementing IT systems to make business processes efficient and to create new perspective. Model 7-S presents the influence of IT systems on particular organizational fields.

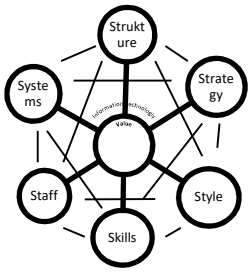

Figure 1. Model 7-S

Source: Brzozowski, Organizacja wirtualna, PWE, Warszawa 2010.

INFORMATION TECHNOLOGY IN EDUCATION

Knowledge management processes should be based on advanced IT systems. All over the world and in Poland there are four models of modern technology application:

- Central model - controlling distant learning in big organizations (e.g. state universities) by specially organized unit responsible for e-learning in subordinate units (departments).
- Independent model – e-learning management on the level of the unit (department) with no connection to superior units.
- Application Service Provider model (ASP) - a third-party entity manages and distributes software-based services and solutions to customers across a wide area network from a central data center
- Mixed model – combination of three models described above

E-learning platform supports both types of processes in educational organization. Research is conducted mainly by individuals or closed teams and e-learning tools improve communication, presentation and verification of analysis. E-learning system for teaching processes is not only an IT system but a complex integral part of organization with all the elements: people, processes, information and data[10]. Teaching process is about transferring knowledge in a coded and personalized form

[9] Knowledge management (KM) includes recognizing the internal and external sources of information, gaining knowledge for the system and methods of organizing, keeping and sharing knowledge.

[10] Red. E. Smyrnowa-Trybulska E-learning&Lifelong learning; J. Kuck, D. Kaźmierczak, E-learning as Distance Transfer of Skills and knowledge, UŚ Katowice, 2013, s. 108.

to the recipient/student. Its effectiveness depends on access to knowledge resources, qualifications of teachers, quality of programs and their compatibility, organizations of the knowledge transfer between participants of the process. That is why the whole process should be analyzed on three interpenetrating levels: methodological- substantial, technological and organizational-financial with the people as a key factor. The e-learning platforms provide tools for teaching platforms on all three levels, which is illustrated in the chart.

The structure of the e-learning platform. Table 2.

Methodological-substantial level	• Communication tools (forum, chat, conferences, synchronous and asynchronous tools) • Teaching tools (tests, materials, exercises) • Management of user data (tracking, statistics, identification of online users, personal user profile)
Technological level	• Usability (user-friendliness, support, documentation, assistance) • Adaptation (adaptability, personalization, extensibility) • Technical aspects (standards, system requirements, security, scalability)
Organizational-financial level	• Administration (user management, authorization management, installation of the platform) • Course management (administration of courses, test assessment, organization of course objects)

Source: A. Stecyk Wartość procesów e-learningowych w podmiotach edukacyjnych, Difin, Warszawa, 2013

Although implementing e-learning platforms has numerous advantages, it also has some limitations. The most important are presented in the table below.

Advantages and limitations of e-learning platforms. Table 3.

Advantages of e-learning platforms	**Limitations of e-learning platforms**
• central coordination and management of courses on the level of designing, distributing, accounting and controlling, full availability for students • standardization of information resources, faster transferring of new knowledge to any place with immediate correcting or providing information tailored to the needs • enhanced efficiency by alternative teaching methods, easy, access to knowledge without time and space limits • building up new skills easily by applying *blended learning* method • high effectiveness ensured by testing, certificates, and free contact with experts • stress-free teaching provided to a student at any time and place • better use of resources, detailed analy-	• required access to the infrastructure (computer, network) and basic computing skills including good writing skills for solving tests and participating in forums • high initial costs infrastructure and teaching materials preparation • independent training needs, high motivation and time management better than in case of traditional training • in some cases traditional classes are indispensible (computing courses, leadership courses or others requiring practical field trips) • effective introducing of this methods needs series of organizational (and technical) actions. The most difficult, however, is changing mentality and habits of tutors as well as trainees.

sis of a single person or group competence and skills; • cost reduction of preparing teaching materials by using tools for creating individual courses • financial benefits after reducing business trip expenses • better use of technical and academic capacity (scientific works, analysis, including multimedia and presentations)	

Source: J. Kuck, D. Kaźmierczak, E-learning as Distance Transfer of Skills and knowledge, Red. E. Smyrnowa-Trybulska E-learning & Lifelong learning, UŚ Katowice, 2013

E-learning platforms

E-learning platforms can be divided into open source and commercial[11]. Open source platforms strongly influence the development of e-learning – this solution is adopted (mainly for economic reasons) by academic circles. The most popular are Moodle, Illias, and Claroline. In the ranking of 100 top online teaching tools Moodle was the most popular as a open-source platform[12]. Also evaluation of chosen open-source platforms prove that Moodle fulfills all criteria. The second group of educational platforms are commercial platforms created by companies. They are purchased together with professional training on how to operate the platform, thematic conferences, service and technical assistance with implementing and using the system later on.

Platforms – description. Table 4.

The platform	Qualities
MOODLE (open source platform)	gives possibility to built flexible courses with discussion groups, registers, surveys, materials, task and projects provided online, available in many languages, has simple interface and requires basic computing skills to use web browsers, can be used for comprehensive online courses and as a supplement for traditional courses, applied at more than 36,000 universities and educational institutions and in 196 countries (data from 2009).
ILIAS (open source platform)	offers standardized templates and materials indispensible to create the course, such as an integrated navigation and administration system. Every participant of the course is equipped with their own desktop for necessary resources e.g.: e-mails, notes, bookmark, Google maps, chanel network, podcast management. This platform tools allows for the comprehensive management of the course, resources and users. Implemented by Gdynia Maritime University and National Defence University[13].
CLAROLINE (open source plat-	translated into 35 languages, with access for users in 93 countries, also popular in academic and business circles. Course is module based (course descrip-

[11] Ibidem, s.109.

[12] http://c4lpt.co.uk/top100tools/ (20.02.2014)

[13] S. Szabłowski, *E-learning dla nauczycieli,* Wydawnictwo Oświatowe FOSZE, Rzeszów 2009, s.113.

form)	tion, calendar, notices, documents, exercisers, tasks, homework, groups, users, chat). The user knowledge acquisition may be controlled by various kinds of tests, final works, statistics system[14].
FRONTER (commercial)	used by over 3500 educational institutions in Europe, offers package of about 90 tools selected by experts from many countries. Their cooperation results in new ideas, innovative concepts and technologies useful in education. After analysis they are embedded into new versions of the platform. Fronter is user-friendly and can be used intuitively.
BLACKBOARD (commercial)	used by about 5 thousand institutions in 60 countries,[15], fosters cooperation of students creating lively communities beyond the classroom and facilitates managing and sharing valuable materials within the whole organization[16].
LOTUS LEARNING SPACE 5.0 (commercial)	offers numerous possibilities, supports manager's work providing sales departments with information about new products and effective ways of selling them, enables workers to learn about latest regulations binding in the company, integrates all resources of distance learning[17]

Source: J. Kuck, D. Kaźmierczak, E-learning as Distance Transfer of Skills and knowledge, Red. E. Smyrnowa-Trybulska E-learning & Lifelong learning, UŚ Katowice, 2013

Variety of e-learning solutions proves that the e-learning market has been successfully established in both world and Polish reality. A big advantage of platforms is that they have an interface in Polish language, which makes work, learning and gaining new skills much easier. Both open source and commercial platforms have numerous possibilities. Development of open source platforms equals brand commercial ones.

If innovation is a strategy understood as a combination of people, resources and methods to achieve a defined goal, e-learning should be the element of the educational offer. E-learning together with traditional, e-learning and complementary methods will enhance quality and effectiveness of modern teaching process. The compatibility of methods constituting modern educational model is presented in table 5.

Modern Educational Model. Table 5.

Traditional teching	**E-learning**
• lectures • talks • classes	• online trainings (wbt) • computing trainings • mlearning (using phones) • other (TV trainings)
Blended learning/ Complementary teaching/learning	

[14] M. Plebańska, *E-learning. Tajniki edukacji*…, wyd. cyt., s. 127.
[15] https://bb.wszia.edu.pl/webapps/portal/public/logowanie_do_blackboarda/#Co_to_jest_Blackboard (15.01.2013).
[16] http://www.smarteducation.pl (15.01.2013).
[17] http://www.puw.lodz.pl/downloads/docs/2_metodyka/2_narzedzia/informacje_o_lls.pdf (15.01.2013).

Source: A. Stecyk, Wartość procesów e-learningowych w podmiotach edukacyjnych, Dfin, Warszawa, 2013.

Teaching process is a designed and organized cooperation of a teacher and student to achieve the teaching goals by presenting given content in appropriate forms, with well-matching methods and teaching tools[18]. Education of students for instance at AON should be based on the concept of holistic education[19] which aims at preparing students at any age to meet the challenges of living in community as well as academics.

The student learning about the world estimates, judges the information and take actions. Holistic education is about learning about the world, evaluating and acting. Scientific knowledge has four-layered structure: descriptive, explanative, evaluating and normative and there are four ways of learning respectively: - informative (learning by acquiring ready information), problematic (discovering and problem solving), emotional (building the system of values), operational (acting practically). Holistic education involves all teaching methods which effectiveness is estimated in nine-point scale.

Effectiveness of teaching methods. Table 6.

Teaching methods (ways of learning)	Methods and their effectiveness in scale 1-9
Passing (acquiring)	Lecture (3); observation (6); talk (4)
Problematic (discovering)	Exsperiment (7); presentation (6)
Exposing (experiencing)	Models (4); discussion (9); educational games (8)
Practical (acting)	Practicing (9); exercising (9); presenting (7)

Source: J.J. Czarkowski, E-learning dla dorosłych, Difin, Warszawa, 2012.

Teaching process involves competence development. The comparison of traditional and e-learning approach is presented in table 7 below.

Competences – comparison of methods. Table 7.

Competence	Traditional mehod	E-learning	Comparison
Time management	teacher	a lot of freedom	In e-learning self-discipline needed
Searching for information	Search for information in libraries, evaluate	Searching through Web-sites, evaluating content	More difficult to evaluate the Internet sources
Writing	Taking notes, writing essays, doing exercises	Typing, taking notes, doing exercises	Key competence in both methods
Reading	Linear reading	Displayed picture, dynamic (eye does not move in a linear way)	Key competence in both methods
Listening	Listening to teachers and other students	Rare, only during video conferences or on purpose when audio materials provided	in e-learning of small importance; in traditional methods of big importance

[18] A. Juncewicz, Identyfikacja potrzeb szkoleniowych, AON, Warszawa, 2010, s. 112.
[19] W. Okoń, Wprowadzenie do dydaktyki ogólnej, Warszawa 1997, s.191.

Self-esteem	Many ways to compare progress with others	Evaluating the progress in reference to standards and expectations	e-learning lacks to- one-another comparison
Cooperation	Direct cooperation and communication	Indirect cooperation and communication, depends on computing skills	Communication in e-learning stretches in time so needs more motivation

Source: J.J. Czarkowski, E-learning dla dorosłych, Difin,Warszawa, 2013.

There is also a considerable shift in the teacher-student relation in the process of teaching and communicating. In a traditional approach a teacher is a supplier of content and a controller and a student – a learning person with no power to influence the whole process. In modern methods a student must be active.

Traditional teaching is based on spoken or/and written communication. By means of modern technologies the content may be enriched with animation, sound, picture and present content which is difficult or impossible to present in words. Thus, the analysis is easier and understanding deeper. The Dale's Pyramid[20] explains that a student remembers 90% of the content while speaking and acting, 70% - speaking and writing, 50% - watching and listening, 30% - watching, 10% - reading and listening.

Blended learning[21] should come up to expectations of majority of clients as it chooses and unites (blends) the most appropriate elements of all methods available. However, it is not the optimized teaching (business) process that guarantees success but a dynamic process designed or tailored to client's needs. The optimal process can be successful only if client's needs are standard and easy to predict. Contemporary client chooses the offer adapted to the individual needs. The organization should learn how to gain, verify and use the knowledge about client's demands.

Life cycle of every process lasts for defined and limited time and consists of the following phases: creating and innovative development, adapting, maturity and collapse. The last phase is characterized with the worsen service quality and poor standards. That is why the whole life cycle should include an improvement phase that would assure the high intelligence of processes controlled top-down. Processes are sensitive to changes however, quick correction should reinstate their effectiveness.

---

[20] P. Grajweski, Procesowe zarządzanie organizacją, PWE, Warszawa 2012, s.43.

[21] A. Stecyk, Wartość procesów e-learningowych w podmiotach edukacyjnych, Difin, Warszawa, 2013, s.45.

There are many definitions of blended learning yet no single accepted one. It is as structured opportunities to learn, which use more than one learning or training method, inside or outside the classroom. This definition includes different learning or **instructional methods** (lecture, discussion, guided practice, reading, games, case study, simulation), different **delivery methods** (live classroom or computer mediated), different **scheduling** (synchronous or asynchronous) and different **levels of guidance** (individual, instructor or expert led, or group/social learning). Blended learning offers the potential to create effective training, to save time and money for the Institute, to make training more engaging and convenient for learners, and to offer learning professionals the chancetoinnovate. http://web.mit.edu/training/trainers/resources/blended_learn...http://web.mit.edu/training/trainers/resources/blended_learn...

To do so the processes must be monitored. The effectiveness of processes is measured by time, cost and quality of a product (service). Effectiveness means the degree to which something is successful in producing a desired result and economic efficiency is a state in which every resource is optimally allocated while minimizing waste and inefficiency, goods are produced at their lowest possible cost, as are the variable inputs of production.

Measurement of educational effects of teaching methods and comparison of results help correct resources and educational processes and so enhance the quality of services[22]. The organization should be estimated from four perspectives:

- Perspective of business processes which are client-oriented: production, sells and distribution, as well as innovations
- Perspective of a client - satisfaction is an indispensible information about possibilities and condition of the organization
- Financial perspective – decisive factor in the development abilities and position on the market
- Development perspective – defines resources to be developed to strengthen its value

Detailed evaluation of process on all levels (perspectives) gives reliable information about the effectiveness of teaching methods and helps to increase the quality of designed programs. The better quality will guarantee client satisfaction that is not merely an emotional reaction but the effect of consumption, the relation between client expectations and the purchased product, as well as estimation of fair exchange between a producer and a client[23].

Innovation is mainly about implementation of new technological solutions (e-learning), which implies also organizational changes (process management). And only these two factors together can guarantee a success. The necessity to adapt to turbulent environment calls for changes. Both expanding knowledge resources, scientific and technical development trigger unique ideas however, simultaneously result in *creative destruction*[24], which is a process of creating new ideas, techniques and products driving the ones used so far out of business. From psychological standpoint this condition is difficult to be approved as the clients should abandon habits, familiar practices and procedures.

CONCLUSION

The educational organizations must compete on a global market, where their success depends on quick transfer of current information and knowledge. Implementation of modern technologies values of time and distance change. Distant learning is becoming a new trend and a key component of educational system together with still important a master in tutoring and traditional school. Client chooses the offer adapted to their individual needs which for the educational organization means

22 Quality may be understood as level of client satisfaction, realization of standards and goals. J.J.Czarkowski, E-learning dla dorosłych, Difin, Warszawa 2012, s.250.

23 L. Nieżurawski, Satysfakcja klienta, UMK, Toruń 2010, s.66.

24 J. Bogdanienko, Wiedza i innowacje w firmie, AON, Warszawa, 2011, s.23.

creating dynamic (educational) business processes, i.e. process management. This approach will increase the intelligence of processes which controlled top-down by measuring their effectiveness will produce the high quality of the educational services to satisfy the clients of the 21st century.

Bibliography:

A. Andrzejczak, Projektowanie i analiza szkoleń, PWE, Warszawa, 2010
J. Bogdanienko, Wiedza i innowacje w firmie, AON, Warszawa, 2011
M. Brzozowski, Organizacja wirtualna, PWE, Warszawa 2010
J.J.Czarkowski, E-learning dla dorosłych, Difin, Warszawa 2012
P. Grajweski, Procesowe zarządzanie organizacją, PWE, Warszawa 2012
A. Juncewicz, Identyfikacja potrzeb szkoleniowych, AON, Warszawa, 2010
J. Kuck, Nowoczesne technologie w logistyce", AON, Warszawa, 2013
J. Kuck, D. Kaźmierczak, E-learning as Distance Transfer of Skills and knowledge, Red. E. Smyrnowa-Trybulska E-learning & Lifelong learning; UŚ Katowice, 2013
L. Nieżurawski, Satysfakcja klienta, UMK, Toruń 2010
W. Okoń, Wprowadzenie do dydaktyki ogólnej, Warszawa 1997
A. Stecyk, Wartość procesów e-learningowych w podmiotach edukacyjnych, Difin, Warszawa, 2013
S. Szabłowski, *E-learning dla nauczycieli,* Wydawnictwo Oświatowe FOSZE, Rzeszów 2009
J. Trajer, Zarządzanie wiedzą, PWE, Warszawa 2012

Netography:

http://www.thedailybeast.com/articles/2013/03/20/richard-florida-concedes-the-limits-of-the-creative-class.html (20.02.2014)
http://www.bankier.pl/wiadomosc/Oto-pokolenie-Y-2531947.html (20.02.2014)
http://www.infor.pl/dziennik-ustaw,rok,2011,nr,205/poz,1206,ustawa-o-zmianie-ustawy-o-systemie-oswiaty-oraz-niektorych-innych-ustaw.html (20.02.2014)
http://c4lpt.co.uk/top100tools/ (20.02.2014)
https://www.google.com/search?hl=en&safe=off&output=search&sclient=psy-ab&q=Evaluation+of+open+source+e-learning&sa=Search (20.02.2014)
RSS, http://pl.wikipedia.org/wiki/Podcasting, (15.01.2013)
http://www.e-mentor.edu.pl/artykul/index/numer/35/id/754 (15.01.2013).
https://bb.wszia.edu.pl/webapps/portal/public/logowanie_do_blackboarda/#Co_to_jest_Blackboard (15.01.2013).
http://www.smarteducation.pl (15.01.2013).
http://www.puw.lodz.pl/downloads/docs/2_metodyka/2_narzedzia/informacje_o_lls.pdf (15.01.2013)
http://www.unesco.org/new/en/education/themes/strengthening-education-systems/quality-framework/core-processes/ (9.03.2014)

http://www.llcq.org.au/01_cms/details.asp?ID=12 (09.03.2014)
http://www.nauka.gov.pl/en/law-on-higher-education/ (11.03.2014)
http://www.ehea.info/(11.03.2014)
http://web.mit.edu/training/trainers/resources/**blended**_learn...(11.03.2014)