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# E-Learning in a Postmodern Society

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**Abstract**: The relevance of the chosen direction of research is that e-learning at the present stage of development of society is one of the most popular forms of organization of the educational process. This primarily applies to vocational and postgraduate education. Its main advantage is that it focuses on creating a barrier-free learning environment, ensuring the availability of quality education without separation from work and family and regardless of the place of residence.
The article analyzes the features of updating the education system in the postmodern era and the urgent problems of the education system that need to be addressed (improvement of national educational legislation; changing the image of research and teaching staff; preservation of classical universities; change of system and support for business, which is used to develop science and education; securing the technical and technological needs of the education system). Features of e-learning as a means of meeting the demand for educational services, its advantages and disadvantages are characterized. The peculiarities of functioning of open educational resources as prospects of e-learning development are analyzed.
Continuation of the initiated research is to study the specific characteristics of mobile learning as one of the possible options for e-learning.

**Keywords:** *educational system, improvement of the educational process, information technologies, informatization of society, open educational courses, self-regulated learning.*

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## 1. Introduction

The changes that took place in all spheres of public life in the second half of the twentieth century led to the emergence of a new paradigm for the interpretation of human existence - postmodern. Several scientific works have been devoted to the study of the phenomenon of postmodernism, concretizing its philosophical, cultural, and other aspects, but there are currently several debatable theoretical issues.

In general, the primary basis for all scientific research in the vein of postmodernism is that this phenomenon is heterogeneous and complex, and its development is in the direction of forming a qualitatively new state of society and its culture. It is the ambiguity of postmodernism, and its variability is the root cause of the ambiguity of the interpretation of its impact on the education system.

The peculiarities of change of lightning systems in the postmodern era were poestmodern (Campbell, 2018; Diaconu, 2014; Lyotard, 1983; Nerubasska & Maksymchuk, 2020; Nerubasska et al., 2020), and the wild, propagating democracy Deprofessionalization of the Philosophy of Education, etc. We agree with the statement of Bekh et al. (2021) that the purpose of postmodern education is not so much to transfer knowledge and postulates to pupils or students but to form their worldview values, the spiritual world of the individual, which will determine his position, role and behavior in postmodern society. After all, a person's consciousness is formed by gaining a certain social experience, largely through general and professional education. Postmodernist methodology of cognition is aimed at solving the problems of a particular person, which is characterized by "humanity" and "reality" of thinking.

Another problem that we draw the attention of the scientific community is that in the postmodern era is formed a qualitatively new - virtual reality - in human existence. At the same time, the virtual world creates endless opportunities for the realization of the desires of each person; it does not operate generally accepted today, the concepts of good and evil. Immersion in the virtual world has started the process of blurring the boundaries between the real and the virtual, which disorients the worldview and worldview of man. Scientists are unanimous in their opinion that there is a crisis of consciousness. Current trends in society have formed an understanding that the world economy is on the threshold of a new technological way, in particular, the future will be based on a complex of nano-, bio-, and information-communication technologies. Therefore, the question of the importance and functions of e-learning in postmodern

society remains debatable, which led to the choice of the research topic and the formation of its tasks.

The purpose of this study is to consider and analyze the peculiarities of the functioning of the e-learning in the context of society today.

## 2. Features of updating the education system in the era of postmodernism

The formation of a new ideology of society, associated with the rapid development of technology and convergence of sciences has led to the rapid development of information and communication technologies. And the transition to a qualitatively new state of humanity requires adequate changes in all spheres of life, especially in education. According to Turyahikayo (2021), whose research seeks to study the impact of current philosophical paradigms on the management of educational systems, postmodernism promotes the renewal of the educational system in the light of globalization and individualization, the formation of a global environment of intercultural interaction and creative personality.

The philosophy of the previous era was based on a scientific-materialist understanding of the world around us. The model of today's society is formed around the idea of progress in all spheres and forms of human activity, including education. The source of information and the basis for the formation of educational programs in educational institutions is the surrounding world (natural and artificial).

Entering a new era, we are experiencing a global crisis caused by the lag of spiritual and moral development of mankind from scientific and technological progress. This lag is exacerbated by the education system, forming in the minds of people the leading idea of domination over external nature to the detriment of knowledge of their inner state, the development of sensory-intellectual properties. As Giroux (1991, p. 2) aptly argues, science, technology, and reason are associated not only with social progress but also with the creation of Auschwitz and the science that made Hiroshima possible.

One of the attempts to change the paradigm of education is the creation of the Bologna system, the content of which is to ensure the harmonization of education systems of European countries, the creation of a single European higher education area, providing the use of common educational standards, the highest level of integration of scientific, cultural and professional programs.

The European Commission's main recommendations to national governments are centered around three areas: reform of the content of

education, reform of the management of higher education institutions, and reform of the system of financing educational institutions. However, several scholars, including Appleton (2009), Bendl (2013) and others, stressed that it does not take into account the internal characteristics and capabilities of countries (economic, ideological, political, cultural, religious, ethnic, etc.) and the existence of different educational models. German, French, Italian, Anglo-Saxon), which is unacceptable in the vein of postmodernism. After all, now we are witnessing the emergence of a phenomenon called "dialogue of cultures." It consists of understanding and accepting the differences between cultures, determining the nature and forms of their equal interaction. The existence of many stable socio-political, moral and religious, national, and original systems that have self-sufficient value for citizens, bearers of these cultures, make unacceptable the idea of Eurocentrism as the only right path of development. The assertion of "progressiveness" or "backwardness", "revolutionary" or "reactionary" of existing forms of communities in postmodernism loses its meaning, and ideas about ways of further development are formed gradually, as a result of the interaction of many factors - economic, political, religious, natural, ethnic, etc., providing internal unity and stability of the formed integrity. In addition, critics of the Bologna system of education also point out that it does not form the necessary human qualities in the postmodern and humanistic worldview. And instead of improving the education system, it is averaging and deteriorating.

Researchers of postmodern education, in particular Burbules (2002), Cooper (2005), Sloterdijk (1987), and others emphasize that the following cardinal issues need to be addressed:

**1)** improvement of the national educational legislation with an obligatory discussion of projects by representatives of all strata of society for harmonization of interests of the state, pedagogical collectives, employers, etc.;

**2)** change the image of scientific and pedagogical staff in a positive direction;

**3)** preservation of classical universities with the granting of the right to "autonomy" and the ability to determine the form of education;

**4)** change the tax system for business, if it supports science and education;

**5)** priority provision of technical and technological needs of the education system.

The presence of these problems in education has led to the emergence and spread of new educational trends and paradigms (heutagogy,

constructivism, "learning-to-learn"). In a postmodern society, the ability to learn and learn throughout life is a priority over the results of professional training. As a result, there is an integration of formal and non-formal education, the development of distance learning, increasing demand for e-learning courses.

## 3. E-learning as a means of meeting the demand for educational services

Current changes in the education system are due to globalization and the integration processes of society. In particular, taking into account the requirements of postmodernism, the leading principles are humanization, humanitarianization, cultural conformity, etc. Another fundamental requirement is the formation of motivation to improve the educational and professional level throughout life. The implementation of the outlined tasks is impossible without the use of electronic educational technologies.

Combined with the latest societal capabilities, such as cloud technology, powerful computers, the Internet of Things, and virtual reality, e-learning systems offer significant opportunities in education. The spread of the Covid-19 pandemic has further accelerated the development and improvement of e-learning due to the introduction of world-class quarantine measures, resulting in a change in the format of education in most educational institutions (Weldon et al., 2021).

Electronic training or e-learning is an interactive way of learning in which educational content is presented using information technology. Synonymous with the term E-learning, which is found in scientific publications, are the terms "distance learning", "computer-based learning", "network learning", "virtual learning", "learning with the help of information technology", etc.

Features of the implementation of e-learning are reflected in several scientific studies. In particular, Zuvic-Butorac et al. (2011) identified the need to introduce e-learning as a means of reducing costs in a global economic crisis; Chiheb et al. (2011), Freire et al. (2012) treat e-learning as an effective tool for ensuring the quality of educational services. Instead, Fernandez et al. (2011) focused on the negative aspects of e-learning, in particular, a significant reduction in student achievement. Hu et al. (2021) drew attention to the need to provide flexible interaction with potential students, taking into account their needs when developing e-courses.

The growth of demand for electronic educational services is because that, in today's information society, the educational process should not depend on the place of residence, conditions, and characteristics of

professional activity. The process of professional development must be continuous, so it can be implemented without separation from work and family. Improving the accessibility of education through the use of information and communication technologies is a key goal of e-learning. In addition, the use of e-learning has significant advantages in developing countries. In this case, it is almost the only means to ensure access to quality education for a large number of young people. In particular, such conclusions were made based on the results of publications Asghar et al. (2021), Pham and Tran (2020), Rupere and Jakovljevic (2021), and others.

Researchers emphasize that the possibility of implementing e-learning with the help of mobile technologies makes it accessible and progressive. Researchers such as Aliaño et al. (2019), Panjaburee and Srisawasdi (2018), and others have predicted major changes in the education system with the introduction of mobile technologies. They explain their opinion by the fact that mobile learning brings new practices in education, attracts students to individual and joint learning activities. Several empirical studies have confirmed the effectiveness of the use of mobile technology for educational purposes at different stages of education, including Ifeanyi and Chukwuere (2018), Sung et al. (2016), and others.

Based on our own experience, we believe that e-learning will be effective if it is based on a carefully designed and planned learning process, taking into account the peculiarities of distance interaction. In addition, it requires the use of appropriate methodologically sound training materials and control and measuring tools that ensure the achievement of maximum learning outcomes. The key in this process is pedagogical design as a tool for designing an online course, which was absent in most cases in the abrupt transition to a remote format due to the epidemiological situation in the world. Table 1 shows the stages of designing e-courses that precede their introduction into the educational environment.

**Table 1.** Stages of designing electronic educational courses

| No | Stage | Content of activity | Task |
|---|---|---|---|
| 1. | Needs analysis | The researched phenomenon is comprehensively studied, the conditions and specifics of its formation are determined, the knowledge, skills, and competencies to be formed are specified and | - analysis of the target group;<br>- analysis of the activities of a specialist of the relevant profile;<br>- analysis of knowledge and skills on which the studied phenomenon is based;<br>- definition of general tasks of the course; |

| | | | |
|---|---|---|---|
| | | analyzed, the purpose of training is determined | |
| 2. | System design taking into account the identified needs | Training modules are developed, methods and means of teaching, methods of displaying information are selected and constructed, educational activities at each stage of the e-course are described, a general scheme of training is created | - determine the sequence of learning content;<br>- identify and justify teaching methods;<br>- identify and justify teaching aids;<br>- identify and justify the features of information display;<br>- design the curriculum. |
| 3. | Develop-ment and content of the course | By the written script to ensure the creation of electronic, it's debugging and testing | - implement an e-course plan;<br>- create a course presentation;<br>- to develop a system of control of students' academic achievements |
| 4. | Implemen-tation | Run the course in the selected student community in test mode | - analyze the features of the course;<br>- to record the identified shortcomings and positive aspects; |
| 5. | Project evaluation | Carry out a final evaluation of the developed project | - analyze the results obtained by students;<br>- analyze feedback;<br>- correct and eliminate the identified shortcomings;<br>- provide as needed to strengthen the positive aspects of the course |

Source: Systematized by the authors

Current didactic principles of e-learning, substantiated in the studies of Tovar and Piedra (2014), Weichhart et al. (2018), and others are summarized in Table 2.

**Table 2.** Current didactic principles of e-learning

| No | Principle | Content |
|---|---|---|
| 1. | Interactivity | ensuring the dialogue of the user of electronic educational courses with the coordinator or consultant |
| 2. | Adaptability | the ability to choose the desired characteristics of learning, in particular the individual pace of |

| | | |
|---|---|---|
| | | learning material, learning time, means of feedback and final control, etc. |
| 3. | Humanism | creating favorable learning conditions for each student, providing opportunities for intellectual and creative development, ensuring social security and safety |
| 4. | Consideration of pedagogical expediency in the process of designing electronic courses | mandatory assessment of the need to create an electronic course and analysis of its possible effectiveness, theoretical concept, didactic model of the phenomenon under study, which will be implemented in electronic format |
| 5. | Ensuring information protection | use of organizational and technical means that will allow safe and confidential storage and use of information, educational and personal information |
| 6. | Flexibility and mobility | creation of electronic courses that can be adjusted in the process of educational activities to improve or eliminate the identified shortcomings while maintaining the invariant component of education, which provides the opportunity to change the direction of study within the selected field of knowledge |
| 7. | Economy | The development and implementation of an e-course should be based on the appropriate use of financial resources and the calculation of the possible effects of the acquired knowledge or training in this form of education |

Source: Systematized by the authors

The key to e-learning systems is the learning management system (LMS) and the learning content management system (LCMS). The task of the learning management system is to automate the administrative aspects, and the learning content management system is aimed at managing pupils or students with the content that is offered to them. LMS is a shell through which users gain access to the content of training courses. At the same time, it allows you to control the entire learning process.

The student can register and take the necessary courses, get test results, etc. The teacher is an administrator, controls access to educational content, analyzes the success, features of the courses, and taking into account this information adjusts the existing course. In the case of large-scale training projects, the LMS can integrate with personnel management and resource planning systems. For example, if e-learning is carried out

based on a certain educational institution, then the e-learning system is a component of the e-university management system.

The educational content management system contains a repository of educational materials, relevant, software and administration tools. A repository is a central database with specific learning content that is available to users either as individual elements or as part of a specific training course. The software allows authors to automatically develop e-courses using built-in templates and archival samples. The interface is used for testing, tracking results, demonstrating content according to the user's profile and other possible queries. Administration tools allow you to manage student accounts, open courses, report, and perform other administrative tasks.

The introduction of e-learning begins with the choice of platform on which it will be implemented. This choice depends on the desired characteristics and several important factors: functionality, reliability, stability, cost, modularity, ease of use, properties of the knowledge testing system, and so on. In addition, another important issue is the choice of commercial platform or Open Source. Commercial software has increased reliability, systematic updating, but requires certain license fees. Open Source is usually used for non-profit educational projects. However, as the analysis of several publications, including Cole et al. (2014), Ramírez (2013) and others, shows that Open Source products are currently biased, as there are reasons to doubt the quality and reliability of such programs. The range of LMS and LCMS presented on the market is quite wide. There are both Western and domestic products, both commercial and OpenSource.

The conducted theoretical search on the research problem gives grounds to single out the following advantages of e-learning:

- the opportunity to practice at a convenient time, place, and pace;
- possibility to choose from the available independent training courses, according to individual needs;
- reduction of training costs due to technical and vehicle means, concentrated and unified presentation of educational information;
- use of new information and telecommunication technologies in the educational process;
- equal educational opportunities regardless of the place of residence, state of health, elitism, and material security.

Despite the significant advantages of e-learning, some negative aspects should be considered, in particular:

**1)** the basis of the educational process in electronic format is purposeful intensive work of the student, who can independently determine

the sequence of development of educational modules. This implies the presence of such qualities as independence, responsibility, organization, and the ability to realistically assess their strengths and make informed decisions that are not inherent in all (Chen & Wu, 2015; Guo et al., 2014);

**2)** the presence of certain restrictions for e-learning. For example, it is problematic to practice correct pronunciation by learning foreign languages in the form of e-learning and not having sufficient conversational practice or to learn to play a musical instrument exclusively using exclusively e-learning courses;

**3)** a significant mental load on the student, in particular, due to the difference between a person's cognitive abilities, his abilities, and the existing requirements necessary to perform the work (Longo, 2018);

**4)** the need to form a conscious position of the user of technical means in the process of e-learning, taking into account the ergonomic aspects of this process (Rubio-Valdehita et al., 2017);

**5)** lack of social interaction. Students who study with the help of e-learning tools do not socialize enough during their education. This is especially true for school-age children, in whom the lack of socialization at any stage of adulthood causes irreversible changes in consciousness (Poláková & Klímová, 2019; Shatto & Erwin, 2017).

According to You and Kang (2014), one of the important factors that will reduce the identified shortcomings and successfully implement e-learning is self-regulated learning (SRL), which allows you to create autonomous navigation on the content of learning.

The content of self-regulated learning is the conscious management of cognitive and emotional processes. The student chooses the strategy that is most beneficial for him at the time of the study, properly regulating his emotional state and organizing himself to achieve their goals. Self-regulated learning is a cyclical process in which the student formulates tasks, monitors their implementation, and analyzes the effectiveness of the obtained. Then the cycle is repeated depending on the goals. The properties of self-regulated learning are reflected in the publications Alvi and Gillies (2015), Broadbent and Poon (2015), and Zheng et al. (2016). Scientists have confirmed its effectiveness based on the results of experiments. However, it should be noted that only master's students and specialists were studied. These groups have the appropriate motivation to acquire knowledge or skills, as well as the ability to manage their cognitive processes. Therefore, currently, there is no reason to summarize the results for all categories of pupils and students, this issue requires further study.

Taking into account the characterized negative and positive aspects of e-learning, blended learning is promoted in the scientific community. In particular, at the stage of receiving secondary education preference is given to full-time education, at the stage of obtaining higher education - appropriate combinations of full-time and e-learning, at the stage of advanced training - e-learning tools. However, there is no single right approach. According to Akbarialiabad et al. (2021) and Moskal et al. (2013), the development of a successful blended learning program requires the integration of the efforts of all stakeholders, including students, faculty, and educational administration. However, in this context, the use of open educational resources seems to be the most promising today. Let's consider the outlined question in more detail.

## 4. Creation of open educational resources as a perspective of e-learning development

Summarizing the experience of different countries, Kobayashi (2010) in his research analyzed the trends of society's transition from "e-decade" to "o-decade", which we are experiencing now. We are talking about the transition from the electronic community system (e-business, e-mail, e-government, e-learning) to the mass use of open resources Open Source (open sources, Open Systems, Open standards, Open Archives, Open everything, etc.).

This era began in 2002, when the Massachusetts Institute of Technology presented the Open Course Ware project, opening free access to its course materials. In the same year, UNESCO supported initiatives to create open educational resources on the Internet. According to UNESCO experts, this is the only possible way to provide access to quality higher education and lifelong learning to third world countries (UNESCO, 2002).

Open educational courses allow ensuring compliance of education, in particular professional, with the requirements of the time. Their connectivistic genesis gives new properties to educational systems and meets society's expectations regarding the potential for cooperation, exchange, and free access to educational information. This is not just digital content, but a whole toolkit of packages or services that are offered freely and openly to teachers, students, for further use in teaching, teaching, and research. Moreover, on this basis, online communities of higher education institutions and related organizations capable of promoting and developing the idea of open education are organized. The resources they create are the foundation for starting and supporting various open projects, performing coordination

functions, as well as allowing to exchange ideas and carry out future joint planning for the development of research projects.

Currently, in the scientific community, there is a heated discussion of the advantages and disadvantages of open educational resources, determining their main characteristics. Thus, the theoretical justification for the need for open online courses is reflected in the publications Alraimi et al. (2015), Ifeanyi and Chukwuere (2018), Marques (2013) and others, which predict the transition of most university education in this format, given its significant advantages over traditional technologies. On the plus side, educators from around the world participate in creating open online courses, which determines their quality and diversity (Jordan, 2014; Konstan et al., 2015).

Daneji et al. (2019) conducted an empirical study of the effectiveness of using open online courses for undergraduate students. In the study, based on the analysis of learning outcomes of 368 students, the positive effect of the studied phenomenon was confirmed. A similar approach is observed in the publication of Chiappe et al. (2020), which provides recommendations for improving online educational courses.

Although open online courses are in high demand, Ouyang et al. (2017) drew attention to the main problem - the low level of completion of courses by students. According to researchers, no more than 10% of registered students can complete the course (Ho et al., 2014).

However, despite the shortcomings, scientists predict a future in which the desire to learn is based on the idea of open access to all cultural and educational resources. We agree with Bederson et al. (2015) that open educational resources are one of the main educational tools that help to remove barriers between formal and non-formal education, as they provide a radically new approach to the dissemination of knowledge.

## 5. Conclusions

Given the peculiarities of postmodern society, the education system is expected to train highly intelligent, highly mobile, and flexible professionals with the ability to make independent decisions, work productively in a team, as well ready to renew their worldview, and more. The industrial system with its inherent individualism and alienation from man caused a crisis of personality, which at the end of the last century became a threat to the social progress.

In postmodernism, society is perceived as a complex system of human associations and interactions. All social connections are based on the understanding of the personal independence of each member of society, his individuality. In this context, the philosophy of education is one of the

means of overcoming technological nation and bureaucratization. Despite the controversy in the scientific community, postmodern education is based on the postulates of critical pedagogy, anti-pedagogy, deconstructivism, and poststructuralism. Today, the process of updating educational systems by existing challenges is characterized as criticism, revision, revision, and reconceptualization of ideas. At the same time, a significant place is given to the creation of an open educational environment as a basis for the further development of education.

The article analyzes the features of e-learning in postmodern society, its characteristics, and properties. We consider the prospects of further research to determine the specific characteristics of mobile learning as one of the possible options for e-learning.

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## References

Akbarialiabad, H., Zarifsanaiey, N., Taghrir, M. H., Roushenas, S., Panahandeh, S. M., Abdolrahimzadeh-fard, H., Shayan, Z., Kavousi, S., & Paydar, S. (2021). The impact of flipped learning in surgical education: A mixed-method study. *Knowledge Management & E-Learning*, *13*(3), 273-289. https://doi.org/10.34105/j.kmel.2021.13.015

Aliaño, Á. M., Hueros, A. D., Franco, M. G., & Aguaded, I. (2019). Mobile learning in university contexts based on the unified theory of acceptance and use of technology (UTAUT). *Journal of New Approaches in Educational Research (NAER Journal)*, *8*(1), 7-17. https://naerjournal.ua.es/article/view/v8n1-2

Alraimi, K. M., Zo, H., & Ciganek, A. P. (2015). Understanding the MOOCs continuance: The role of openness and reputation. *Computers & Education*, *80*, 28-38. https://doi.org/10.1016/j.compedu.2014.08.006

Alvi, E., & Gillies, R. M. (2015). Social interactions that support students' self-regulated learning: A case study of one teacher's experiences. International *Journal of Educational Research*, *72*, 14-25. http://dx.doi.org/10.1016/j.ijer.2015.04.008

Appleton, J. (2009, April 28). *Academic rebellion against Bolognese bureaucracy justified.* EuObserver. https://euobserver.com/opinion/28023

Asghar, M. Z., Barberà, E., & Younas, I. (2021). Mobile learning technology readiness and acceptance among pre-service teachers in Pakistan during the COVID19 pandemic. *Knowledge Management & E-Learning*, *13*(1), 83-101. https://files.eric.ed.gov/fulltext/EJ1294756.pdf

Bederson, B. B., Russell, D. M., & Klemmer, S. (2015). Introduction to online learning at scale. *ACM Transactions on Computer-Human Interaction (TOCHI)*, *22*(2), 1-3. http://dx.doi.org/10.1145/2737794

Bekh, V., Vashkevych, V., Kravchenko, A., Yaroshenko, A., Akopian, V., & Antonenko, T. (2021). Education as a Way of Human Existence in a Postmodern Society. *Postmodern Openings*, *12*(3), 01-14. https://doi.org/10.18662/po/12.3/324

Bendl, S. (2013). What can and cannot be blamed on the bologna process. In L. G. Chova, A. L. Martínez, & I. C. Torres (Eds.), *6th International Conference of Education, Research and Innovation* (pp. 267-275). International Association of Technology, Education and Development (IATED). https://library.iated.org/view/BENDL2013WHA

Broadbent, J., & Poon, W. L. (2015). Self-regulated learning strategies & academic achievement in online higher education learning environments: A systematic review. *The Internet and Higher Education*, *27*, 13. http://dx.doi.org/10.1016/j.iheduc.2015.04.007

Burbules, N. C. (2002). Where is philosophy of education today: at the start of a New Millennium or at the end of a tired old one?. *Philosophical Studies in Education*, *33*, 13-24. http://ovpes.org/wp-content/uploads/2012/01/burbules2002.pdf

Campbell, M. (2018). Postmodernism and educational research. *Open Journal of Social Sciences, 6*(7), 67-73. http://dx.doi.org/10.4236/jss.2018.67006

Chen, C.-M., & Wu, C. H. (2015). Effects of different video lecture types on sustained attention, emotion, cognitive load, and learning performance. *Computers & Education*, *80*(1), 108-121. https://doi.org/10.1016/j.compedu.2014.08.015

Chiappe, A., Ibarra, H. C. & Lizasoain, L. (2020). Learning in the openness: the lost way of the MOOC. *Digital Education Review*, *38*, 42-60. http://dx.doi.org/10.1344/der.2020.38.42-60

Chiheb, R., Faizi, R., & Afia, A. E. (2011). Using objective online testing tools to assess students ' learning: Potentials and limitations. *Journal of Theoretical and Applied Information Technology*, *24*(1), 69-72. http://www.jatit.org/volumes/research-papers/Vol24No1/8Vol24No1.pdf

Cole, M. T., Shelley, D. J., & Swartz, L. B. (2014). Online instruction, e-learning, and student satisfaction: A three year study. *The International Review of*

*Research in Open and Distributed Learning*, *15*(6), 112-131. http://dx.doi.org/10.19173/irrodl.v15i6.1748

Cooper, D. E. (2005). *Postmodernism. A Companion to the Philosophy of Education*. Blackwell Publishing.

Daneji, A. A., Ayub, A. F. M., & Khambari, M. N. M. (2019). The effects of perceived usefulness, confirmation and satisfaction on continuance intention in using massive open online course (MOOC). *Knowledge Management & E-Learning*, *11*(2), 201-214. https://doi.org/10.34105/j.kmel.2019.11.010

Diaconu, M. A. (2014). Truth and knowledge in postmodernism. *Procedia - Social and Behavioural Sciences*, *137*, 165-169. https://doi.org/10.1016/j.sbspro.2014.05.270

Fernandez, A., Insfran, E., & Abrahão, S., (2011). Usability evaluation methods for the web: A systematic mapping study. *Information and Software Technology*, *53*(8), 789-817. http://dx.doi.org/10.1016/j.infsof.2011.02.007

UNESCO. (2002). *Forum on the Impact of Open Courseware for Higher Education in Developing Countries*. Final Report. https://unesdoc.unesco.org/ark:/48223/pf0000128515

Freire, L. L., Arezes, P. M., & Campos, J. C. (2012). A literature review about usability evaluation methods for e-learning platforms. *Work*, *41*(1), 1038-1044. https://doi.org/10.3233/wor-2012-0281-1038

Giroux, H. (Ed.). (1991). *Postmodernism, feminism, and cultural politics*. University of New York Press.

Guo, P. J., Kim, J., & Rubin, R. (2014). How video production affects student engagement: An empirical study of MOOC videos. In M. Sahami (Ed.), *Proceedings of the first ACM conference on Learning* (pp. 41-50). Association for Computing Machinery. http://dx.doi.org/10.1145/2556325.2566239

Ho, A. D., Reich, J., Nesterko, S. O., Seaton, D. T., Mullaney, T., Waldo, J., & Chuang, I. (2014). *HarvardX and MITx: The first year of open online courses, fall 2012-summer 2013*. https://dash.harvard.edu/bitstream/handle/1/11987422/1%20HarvardX%20MITx%20Report.pdf?sequence=1 https://files.eric.ed.gov/fulltext/EJ1245607.pdf

Hu, D., Yuan, B., Luo, J., & Wang, M. (2021). A review of emprical research on ICT applications in teacher professional development and teaching practice. *Knowledge Management & E-learning*, *13*(1), 1-20. http://dx.doi.org/10.34105/j.kmel.2021.13.001

Ifeanyi, I. P., & Chukwuere, J. E. (2018). The impact of using smartphones on the academic performance of undergraduate students. *Knowledge Management & E-Learning*, *10*(3), 290-308. https://files.eric.ed.gov/fulltext/EJ1247625.pdf

Jordan, K. (2014). Initial trends in enrolment and completion of massive open online courses. *The International Review of Research in Open and Distributed Learning*, *15*(1), 133-159. http://dx.doi.org/10.19173/irrodl.v15i1.1651

Kobayashi, T. (2010). *Otkrytye obrazovatelnye resursy: osnovnye tendentsyi* [Open educational resources: main trends]. http://www.iite.ru/files/conference2010/Kobayashi.pdf

Konstan, J. A., Walker, J. D., Brooks, D. C., Brown, K., & Ekstrand, M. D. (2015). Teaching recommender systems at large scale: Evaluation and lessons learned from a hybrid MOOC. *ACM Transactions on Computer-Human Interaction (TOCHI)*, *22*(2). https://psycnet.apa.org/record/2015-22703-006

Longo, L. (2018). Experienced mental workload, perception of usability, their interaction and impact on task performance. *PloS one*, *13*(8), e0199661. https://doi.org/10.1371/journal.pone.0199661

Lyotard, J. F. (1983). *The postmodern condition: A report on knowledge*. Manchester University Press.

Marques, J. (2013). *A short history of MOOCs and distance learning*. MOOC News and Reviews. http://moocnewsandreviews.com/a-short-history-of-moocs-and-distance-learning/

Moskal, P., Dziuban, C., & Hartman, J. (2013). Blended learning: A dangerous idea? *The Internet and Higher Education*, *18*, 15-23. https://doi.org/10.1016/j.iheduc.2012.12.001

Nerubasska, A., & Maksymchuk, B. (2020). The Demarkation of Creativity, Talent and Genius in Humans: a Systemic Aspect. *Postmodern Openings*, *11*(2), 40-255. https://doi.org/10.18662/po/11.2/172

Nerubasska, A., Palshkov, K., & Maksymchuk, B. (2020). A Systemic Philosophical Analysis of the Contemporary Society and the Human: New Potential. *Postmodern Openings*, *11*(4), 275-292. https://doi.org/10.18662/po/11.4/235

Ouyang, Y., Tang, C., Rong, W., Zhang, L., Yin, C., & Xiong, Z. (2017). Task-technology fit aware expectation-confirmation model towards understanding of MOOCs continued usage intention. In T. Biu (Ed.), *Proceedings of the 50-th Hawaii International Conference on System Sciences* (pp. 174-183). AIS Electronic Library. https://core.ac.uk/download/pdf/77239481.pdf

Panjaburee, P., & Srisawasdi, N. (2018). The opportunities and challenges of mobile and ubiquitous learning for future schools: A context of Thailand. *Knowledge Management & E-Learning*, *10*(4), 485-506. https://www.kmel-journal.org/ojs/index.php/online-publication/article/view/41

Pham, Q. T., & Tran, T. P. (2020). The acceptance of e-learning systems and the learning outcome of students at universities in Vietnam. *Knowledge Management & E-Learning*, *12*(1), 63-84. https://doi.org/10.34105/j.kmel.2020.12.004

Poláková, P., & Klímová, B. (2019). Mobile technology and Generation Z in the English language classroom - A preliminary study. *Education Sciences*, *9*(3), 203. http://dx.doi.org/10.3390/educsci9030203

Ramírez, M. S. (2013). Challenges and perspectives for the open education movement in the distance education environment: A diagnostic study in a SINED project. RUSC. *Universities and Knowledge Society Journal*, *10*(2), 170. https://doi.org/10.7238/rusc.v10i2.1719

Rubio-Valdehita, S., López-Núñez, I., & Díaz-Ramiro, E. M. (2017). Ergonomic assessment of mental workload in higher education. Effects of education system on student's workload perception. *Ergonomics International Journal*, *1*(1), 000106. https://www.researchgate.net/publication/326322880_Ergonomic_Assessment_of_Mental_Workload_in_Higher_Education_Effects_of_Education_System_on_Student's_Workload_Perception

Rupere, T., & Jakovljevic, M. (2021). Usability and user evaluation of an integrated multimedia e-learning management system. *Knowledge Management & E-Learning*, *13*(3), 334-366. https://doi.org/10.34105/j.kmel.2021.13.018

Shatto, B., & Erwin, K. (2017). Teaching Millennials and Generation Z: Bridging the generational divide. *Creative Nursing*, *23*(1), 24-28. https://doi.org/10.1891/1078-4535.23.1.24

Sloterdijk, P. (1987). *The Critique of Cynical Reason*. University of Minnesota Press.

Sung, Y. T., Chang, K. E., & Liu, T. C. (2016). The effects of integrating mobile devices with teaching and learning on students' learning performance: A meta-analysis and research synthesis. *Computers & Education*, *94*, 252-275. https://doi.org/10.1016/j.compedu.2015.11.008

Tovar, E., & Piedra, N. (2014). Guest Editorial: Open Educational Resources in Engineering Education: Various Perspectives Opening the Education of Engineers. *IEEE Transactions on Education*, *57*(4), 213-219. https://doi.org/10.1109/TE.2014.2359257

Turyahikayo, E. (2021). Philosophical paradigms as the bases for knowledge management research and practice. *Knowledge Management & E-Learning*, *13*(2), 209-224. https://doi.org/10.34105/j.kmel.2021.13.012

Weichhart, G., Stary, C., & Appel, M. (2018). The digital Dalton Plan: Progressive education as integral part of web-based learning environments. *Knowledge Management & E-Learning*, *10*(1), 25-52. https://doi.org/10.34105/j.kmel.2018.10.002

Weldon, A., Ma, W. W. K., Ho, I. M. K., & Li, E. (2021). Online learning during a global pandemic: Perceived benefits and issues in higher education. *Knowledge Management & E-Learning*, *13*(2), 161-181. https://doi.org/10.34105/j.kmel.2021.13.009

You, J. W., & Kang, M. (2014). The role of academic emotions in the relationship between perceived academic control and self-regulated learning in online learning. *Computers & Education*, *77*, 125-133. https://psycnet.apa.org/record/2014-24434-012

Zheng, C., Liang, J.-C., Yang, Y.-F., & Tsai, C.-C. (2016). The relationship between Chinese university students' conceptions of language learning and their online self-regulation. *System*, *57*, 66-78. https://doi.org/10.1016/J.SYSTEM.2016.01.005

Zuvic-Butorac, M., Nebic, Z., Nemcain, D., Mikac, T., & Lucin, P. (2011). Establishing an institutional framework for an e-learning implementation - Experiences from the university of Rijeka, Croatia. *Journal of Information Technology Education: Innovations in Practice*, *10*(1), 43-56. https://www.learntechlib.org/p/180774/