

Ecological perspective in analysis and evaluation of specificity of distance education environment

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Abstract: The development of a human being takes place in the interaction with his/her life environment. Educational environment, including distance education environment, is particularly important for the facilitation of the sustainability of all society and the development of each individual. Ecological paradigm becomes more and more topical in modern education. This paradigm ensures the perspective in the research and sustainable development of distance education environment. The authors of the article base their research on the ecological approach, where an educational institution is studied as the distance education environment, analysing and evaluating its qualities and functions principles. The aim of the article: basing on the ecological approach to analyse and evaluate advantages and disadvantages of distance education as specificity of distance education environment. The advantages of distance education, first, are connected to the provision of education's individualization and accessibility as: there are no geographical limits or state borders for distance education. It is accessible in any place where there is Internet access; distance education is possible in any time of the day, time limits for distance education are flexible (except the dates of examination that have been previously set and the time allotted for an online test), distance education has no limits of age, the target audience of distance education is very varied throughout the whole life. The disadvantages of distance education are connected with high costs that occur developing and maintaining e-environment for distance education, the operation of technologies and provision of Internet access, as well as limited opportunities for socialisation in distance education environment.

Keywords: Advantages and Disadvantages, Distance Education Environment, Ecological Approach.

Introduction

One of the main aims for the modern education is to facilitate the sustainability of *information society*, therefore an important feature that highlights differences in the education of 20th and 21st century is the variety of information and communication technologies (ICT) and the expansion of their application in the education.

The development of information and communication technologies caused far-reaching consequences in human life and activities and also seriously influenced education, providing wide perspective for the development of distance education environment (Simonson, Schlosser, 1995).

The experience shows that there has been rich experience amassed abroad regarding distance education not only in the field of comprehensive and academic education, but also in the field of professional education. In Latvia, at present, there exists experience mostly regarding the development and implementation of the offer of distance education in the field of comprehensive and academic education. Unfortunately, the issue of distance education is still controversial in the environment of vocational/professional education in Latvia, because there exist stereotypes in relation to the opportunities of acquiring professional competences in the distance education environment. The authors believe that further development of distance education environment in Latvia will solve the existing problems and contradictions also in the field of vocational/professional education. Therefore it was very necessary to research specificity distance education environment.

The aim of the article: based on the ecological approach in education, to analyze and evaluate the advantages and disadvantages of distance education environment.

Methodology

The development of a human being occurs interacting with the surrounding environment. The environment of education has a paramount importance for the facilitation of the society's sustainability on the development of each individual, thus the *ecological paradigm* has become topical in the research of education, including distance education.

For research, analyze and evaluate information on the history of development of distance education, the authors of the article so far carried out research in different directions (Katane, Katans, Vāvere, 2012a; Katane, Katans, Vāvere 2012b; Katane, Kristovska, Katans, 2013): 1) the ideas of humanization and democratization of education in the history of educational ideas, including the origin of the idea of lifelong learning and distance education as means for education accessibility, 2) the open school, open education and the humanistic targeted, open educational environment concepts, 3) the origin and history of the distance learning/distance education development; 4) ecological approach in the research of distance education environment.

In order to uncover the specific features of distance education environment and to provide the grounds for it, the authors of the article have based their research on the *ecological approach*.

Nowadays (in the beginning of the 21st century) ecological approach regarding to education, including distance education, was scientifically justified in several publications (for example, Frielick, 2004; McCalla, 2004; Normak, Pata, Kaipainen, 2012; Shaw., Chacon, 2010; Smith, 2011; Sterling, 2003 etc.).

One of approaches demonstrating ecological approach in the educational ecology is to develop a classification of environmental components and contexts that would enable the research and description of the distance education environment as a multidimensional and multifunctional environment.

Several authors distinguish *information environment* in their classification of environment (Katane, 2007). The experience of the authors leads to a finding that ***the information environment of distance education*** encompasses all kinds of information that is necessary for the distance education, as well as a process of information exchange where both teaching staff/faculty and pupils/students are involved. The accessibility and exchange of information in any place and anytime is a significant feature of distance education (Katane, Kristovska, Katans, 2013).

The accessibility of information environment is provided by means of ICT, thus the information environment is closely related to the technological environment which can ensure e-learning (studies). Providing the grounds for e-learning several scientists point out ***the technological environment*** (Chee Meng, Werner 2005; Praude, Beļčikovs 2001). Description of specific features characterising the information environment and technological environment is closely connected with such concepts as ***means of communication, media*** that include all modern means of mass media: television, film, video, radio, photography, advertisement, newspapers and magazines, recorded music, computer games and Internet.

Media are the films, pictures, and Internet sites etc., which are offered by different means of communication. Some of these media are applied in media based education in order to diversify the ways of learning and to expand the range of sources that provide education, first, making them more accessible for those who are studying by means of the Internet. The use of media facilitates learning only when media are appropriate to the content of education; there is a definite link between the applied e-learning method and the media. Electronic media can be divided into analogous and digital media. Analogous media have lost their importance if they can be used in the modern educational process at all. Digital media, on the other hand, can be more versatile, flexible in their application, especially if used in combination with the Internet (Ivanova, Kristovska, Slaidiņš, 1999; Slaidiņš, 2005).

The concept e-learning encompasses the historical development. ***“Until the introduction of the term e-learning in 1995 several terms were used instead of it: in the beginning Internet based training, and a little bit later-Web-based learning, thus explaining that learning can take place both on the Internet***

and Intranet. Then followed the term **Online learning** and eventually adopting the **E-learning**, accepting the wide usage of abbreviation “e” during the “dot com” boom. The appearance of “e-“ enabled the industry to attract millions of dollars from investors that were ready to invest their financial resources in any field starting with this magical letter.” (Slaidiņš, 2005, 4).

Thus the term **e-environment** took an important place in the educational and pedagogical terminology. Nowadays *e-environment* is one of basic components or contexts characterizing distance education.

Having accomplished the theoretical research we have identified three main contexts of distance education environment: **1) information environment, 2) technological environment, 3) e-environment.**

The contexts of distance education (technological environment, information environment and e-environment) are closely interrelated, complementing each other. In relation to all three contexts the specific feature of distance educational environment is uncovered by the key concept **e-learning (e-studies)**. There are several definitions for the term *e-learning*. Some definitions interpret e-learning extremely narrowly, identifying them with online learning, while others on the contrary define a very wide scope of application.

For example, Latvian scientists (Ivanova, Kristovska, Slaidiņš, 1999; Slaidiņš, 2005) write that the concept **e-learning** involves both formal and nonformal processes of learning, virtual groups and events, using a variety of electronical equipment, wireless and mobile studies: Internet, intranet, extranet, CD-ROM, video and audio records, TV, mobile telephones, notebooks, tablets etc. Sometimes also knowledge management is considered to be a form of e-learning.

R. Zemsky and W. Massy (cited in Bullen, Janes, 2007) have provided a division of several *e-learning* categories. *E-learning as distance education*: study courses, programmes, that are fully or partially carried out by means of the Internet. *E-learning as learning using electronic means*: electronic teaching and learning using electronic means. Such learning can be applied not only in distance education, using the Internet, but also in lessons of traditional full time studies. *E-learning as the software or environment of learning provision*: software that is used to organise and manage teaching and learning; these are learning management systems, for example, BlackBoard, Moodle etc. In these e-environment systems the mutual interaction of pupils/students, teachers and study resources takes place, including access to teaching aids, books and methodical materials of the course. Experience of article authors and the accomplished research suggest that in distance education it especially important to design and maintain such e-environment system.

Ecological approach provides a wide perspective for the research of specific features characterizing the educational environment, where the education environment, including distance education environment, is understood as (Katane, 2005; Katane, 2007; Katane, Kristovska, Katans, 2013): 1) multilevel environmental system, therefore it is possible to study the environment from the structural, evolutionary and functional point of view; 2) a multicomponent/multicontextual and multifunctional environmental system. On the basis of the ecological approach in education, several features and functioning principles of education environment as ecological system can be distinguished, analysed, and assessed.

Providing the grounds for specific qualities of distance education, the analysis and comparison of the environmental context are emphasized in the article. The following **methods of research** were applied in the theoretical study (2011-2013): 1) the analysis and assessment of scientific literature and its content; 2) reflections on experience shared by the authors of the research.

Results of Research

The Analysis and Evaluation of Distance Education Environment: Advantages and Disadvantages

Distance Education has been introduced as an innovative form of education. Nowadays it is of great importance for the whole Latvia education system and particularly in adult education.

The introduction of distance education as an innovative form of studies is a complicated process that needs specific organisational provision, management. In the science of management up to the present moment the term management is mostly used, referring to (Kristovska, 2005):

- the complex of activities, including planning, organisation, coordination, motivation and control; this complex is oriented towards more effective use of organisation's employees, financial, material and information resources, in order to achieve the aims of the organisation with higher affectivity;
- skills to achieve the set aims, making use of human labour, intellect and motives of behaviour.

The term *management of distance education* is attached to purposeful (clear, definite and *achievable aims*), creative arrangement of an open and flexible system for the support of studies, the provision of continuity and development by means of different resources. According to preconditions for the introduction of management targeting principles, distance education provides (Kristovska, 2005): 1) regular examination of the aim and its update in compliance with the needs of distance education target groups within the conditions of labour market; 2) a variety of resources necessary for the achievement of the aim; 3) system of regular assessment and control, where those who are studying and the organizers of distance education are able to track their achievements progressing towards the aim. In the management of distance education it is very important to apply the principle of *management by walking around*, where the basis is communication with the staff, and information obtained *on first hand basis*.

V.Kanavo (КАНАВО, 2010) has identified three fundamental principles of distance education environment: 1) distance education as the environment of technologies; 2) distance education as an open and accessible environment of education; 3) freedom and flexibility in the environment of distance education.

Latvian scientists (Ozoliņa, Slaidiņš, 2003) point out that the ideas and methodology of distance education are based on several interconnected principles: 1) an opportunity to study from the distance, 2) openness and wide accessibility, 3) flexibility and adaptation.

According to the experience of the authors of this article, ***there are also other principles or requirements for the successful provision of distance education***: 1) provision of pedagogical and psychological environment that is supportive, friendly, motivates self-directed learning; 2) individual approach during the studies, which is not the same as individualisation of education (*individual approach in learning* and *individualization of education* are terms which are not synonymous, though are closely interrelated and complement each other); 3) the provision of didactic and methodical environment: structuring of study content and understandability; designing of video lectures, teaching aids and methodical materials and their accessibility, technical equipment with technical support service; 4) versatile interaction between the educator and the student (teaching and learning), where a special place is given to direct and indirect as well as timely exchange of information, providing feedback loop; 5) research of distance education specificity and the process itself, experimental approbation of innovations in practice; 6) sharing of experience both on the level: of the institution and individual.

The specific qualities of distance education have been justified by different authors in their publications. In our theoretical research we have paid special attention to the analysis of advantages and disadvantages of the distance education environment, which is very important in the management of distance learning. Both the results of theoretic research and personal experience enabled us to come to a finding that distance education has several ***advantages***.

For example, S.S.Ravi (Ravi, 2011), analysing the specific features of distance education, points to: 1) flexible system of education without any limitations as to the age, place, sex, religion or time; in distance education the pace of student's progress and the time of learning is set by the student; 2) distance education provides an opportunity to get education for those who are not able to complete education in the traditional system; 3) reduces psychological and physical stress, pedagogical pressure

that can appear in the system of formal education; 4) distance learning encourages and makes one believe in one's own power and skills; 5) distance education improves and develops those competences that are very important in the modern society; 6) helps to improve knowledge and skills in the field of interest; 7) encourages those who are socially and economically different; 8) encourages and provides opportunity to combine studies with work; 9) turns education into a lifelong process.

J. Duggleby (Duggleby, 2000) identifies the following advantages of distance education: 1) access to a wide scope of knowledge and skills; 2) convenient learning for those who are not able to attend regularly full time classes (e.g. work in shifts), because the student can learn any time; 3) distance education is suitable for those who travel very often, as anything that might be necessary can be taken and accessible anywhere in the world; 4) distance education is suitable for those who have various obligations (e.g. mothers with small children, full time employees etc.); 5) it provides an opportunity to study for those who live in remote areas where there are no traditional schools, for example, in the countryside; 6) it is possible to economise on time that would have been spent on commuting to/back from the school; 7) distance education is suitable for those who are handicapped, have health or communication, behaviour problems or other obstacles that hinder or deter the completion of education in the traditional way; 8) distance education students can decide themselves when to start the new study subject; 9) the quality of materials for distance education (books, video instructions, audio) and its content is good and they are accessible to everyone; 10) the quality of studies is less dependent on the communication skills of the teacher, attitudes towards students and/or the subject of studies etc.; 11) in distance learning assessment is more objective: assessment is performed evaluating the quality of the work not the age, nationality, language skills etc.

G. Feders considers that the advantages of distance education are that the student (cited in Katane, Kristovska, Katans, 2013): 1) studies anytime when it is convenient and in a suitable pace; 2) can complete the highest education; 3) can study from effective learning materials; 4) can use features accessible in distance learning, including visual effects: video recording, sound effects-audio recording etc.; 5) can use individual learning opportunities, including also the support of their individual teachers/consultants; 6) can listen to lectures several times.

Our experience shows that there is one more benefit in distance education. It is a possibility to study *incognito*, which is very important for some people due to various important reasons, for example, position, social status, shyness, negative previous experience in communication etc. The ethics of distance learning provides the confidentiality of study process, which is usually stipulated in the learning/studying agreements. An individual profile and access code are assigned to each student that can be used in examinations and tests without disclosing the name and surname of the student. Distance education enables people of different age to study in one group without being ashamed for their age. Distance education also provides opportunities for disabled people.

As any kind of education acquisition distance education has also its *disadvantages*.

I.Savina (Савина, 2009) points at several disadvantages related to distance education: 1) limits of technical facilities; 2) technical incompetence of educators; 3) lack of trust in technologies, after some time students want to communicate with educators in person; 4) educators' methodological incompetence in distance education can lead to a situation when students will become passive users (consumers) of education content (information) sources and different technologies; 5) lack of learning skills as well as technological incompetence can lead students to different problems in distance education, including academic failure and loss of motivation to change something; 6) limited facilities for laboratory and practical assignments that do not encourage the development of practical skills; 7) in rural areas there are still problems with internet access, thus with the access to distance education; 8) social isolation, insufficient verbal and non-verbal communication; 9) absence of pedagogical control during examination and progress tests; 10) inability to overcome problems brought about by the specific process of studies in distance education forces students to discontinue their education; 11) methodological incompetence of educators in distance education can lead to uniformness of learning forms and lack of pluralism in opinions, including high programmability of test assignments leading to similarity of tests, decreasing creativity, variety of answers etc.; 12) international level of distance learning requires a competence of language, including foreign

language, whose level very often is not sufficient to study successfully; 13) problems in distance education or development of separate courses arise when educators are unable to switch from the traditional pedagogical approach of full time studies to the approach of distance education (comment: according to the experience of the article's authors not always lectures that are prepared for distance learning are well-considered and clearly structured, these lectures do not provide general survey of study content and fail to prepare students for independent work, and are also fragmented, over-detailed and cover only one narrow subject); 14) the methodological requirements set for the teaching aids in distance education not always allow their authors to display full content of studies.

S.S. Ravi (Ravi, 2011) writes that distance learning has the following disadvantages: possible digression from the academic standard; limited practising experience; distance education students have few opportunities to involve in the activities of the study program; it is impossible to facilitate such values as love, sympathies, cooperation etc. in distance education; students have no possibility to ask their questions about interesting, doubtful or unclear issues to educators communicating directly with them; it is impossible to acquire specific education by means of distance education, professions that to a great extent are tied with acquisition of practical skills, for example, science, engineering, technologies and medicine; there are societies or parts of a society (social groups) that are led by stereotypes and a biased attitude towards education obtained by means of distance learning, including certificates and diplomas, and prefer education obtained in the traditional full time education.

Also J. Duggleby (Duggleby, 2000) states that in distance education: students may feel socially isolated and that can diminish motivation to learn; lack of opportunity to express personal opinion in discussions with other group mates or course mates; impossible to carry out cooperative learning, including group work, ensuring cooperation in the accomplishment of specific assignments; lack of peer support; lack of flexibility in the content of educational program, because the programs for distance education are specially selected and controlled; additional resources must be allocated (also financial resources) to design materials for independent learning, the content of learning aids can quickly become outdated; sometimes students have to wait for a feedback from the educator for several days or even weeks; impossible to get explanation and find a solution for a problem at once, it is time consuming; educators do not see their students, therefore they cannot follow the non-verbal language of the student and understand that students are uninterested or confused; in some subjects a special equipment is necessary, that cannot be always provided due to high costs; difficult to check and assess definite practical skills.

G. Feders (cited in Katane, Kristovska, Katans, 2013) finds the following weak points in distance education: 1) distance education is not elitery; 2) lack of personal contact with the educator and other students; 3) considerable investment of capital is necessary to start the process of distance education; 4) the offer of distance education programs is limited as not all study programs can be implemented by means of distance learning; it is necessary to have a powerful computer with fast internet access; 5) due to internet is not accessible in the whole territory of Latvia, only where there is internet access.

Some positive perspective towards the issue of distance learning popularity growth is provided by V. Kanavo (Канаво, 2010), suggesting that at the present moment there are short-term problems (difficulties) that later will be reassessed, following the development of the society and technologies, improvement of knowledge society's computer skills and competences, and the increase of human well-being. Disadvantages of distance education, to a great extent, are brought about by the incompetence of educators un lack of psychological preparedness for the work in the environment of distance learning. The preparedness of educators for pedagogical work in the environment of distance education can be facilitated by: improving and developing further the competences of educators, including media competence, methodological competence working in distance education; improving study programs and available study materials; ensuring considerable variability of examination assessments related to one topic, that would exclude unfair use of assignments performed by other students; providing infrastructure necessary for distance education; educators must be offered opportunities for further training in the field of multimedia; organising the team-work of different professionals, incl. IT staff in order to maintain the quality of distance education environment; diversifying the templates for examination assessments beyond the limits of interactive tests in e-environment; recognizing the importance of entrepreneurship also in the field of education, as the

costs that are necessary to provide the environment for distance education are considerable; each institution of distance education using or designing user friendly and well-structured e-environment that at the same time would provide a wide range of opportunities.

Our experience testifies that the **advantages** of distance education, first, are connected to the provision of education's individualization and accessibility as: there are no geographical limits or state borders for distance education. It is accessible in any place where there is Internet access; distance education is possible in any time of the day, time limits for distance education are flexible (except the dates of examination that have been previously set and the time allotted for an online test), distance education has no limits of age, the target audience of distance education is very varied throughout the whole life. The **disadvantages** of distance education are connected with high costs that occur developing and maintaining e-environment for distance education, the operation of technologies and provision of Internet access, as well as limited opportunities for socialisation in distance education environment.

As experience shows, considerable experience in distance education organising professional education is amassed abroad, however this is still very disputable in the educational environment of Latvia, since there are stereotypes regarding distance education in professional education. The authors are convinced that further development of distance education environment in Latvia will solve the existing problems and controversies in the professional education as well.

Conclusions

Ecological approach is very important in research of the distance education environment. three main contexts of distance education environment: 1) *information environment*, 2) *technological environment*, 3) *e-environment*. In relation to all three contexts the specific feature of distance educational environment is uncovered by the key concept *e-learning (e-studies)*. Taking the ecological approach as the basis in education several distance education environment qualities and functioning principles can be identified, analysed and assessed. There are several principles that characterize and provide the specificity of distance education environment, for example: *distance, flexibility, openness*. All principles on the whole ensure the opportunity to study at any place, time, at a suitable pace, according to the individual plan and abilities, possibilities and needs, as a result, the individualization of education is possible.

The distance education environment has its advantages and disadvantages. The advantages of distance education, first, are connected to the provision of education's individualization and accessibility as: there are no geographical limits or state borders for distance education. It is accessible in any place where there is Internet access; distance education is possible in any time of the day, time limits for distance education are flexible (except the dates of examination that have been previously set and the time allotted for an online test), distance education has no limits of age, the target audience of distance education is very varied throughout the whole life. The disadvantages of distance education are connected with high costs that occur developing and maintaining e-environment for distance education, the operation of technologies and provision of Internet access, as well as limited opportunities for socialisation in distance education environment.

Distance education is a perspective direction in education and research in the context of information society.

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