

Секція 4. Цифрові технології в освітніх і наукових процесах.

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DEVELOPING CREATIVITY WITH E-LEARNING TECHNOLOGIES IN MODERN EDUCATION

Introduction. Nowadays, educators realize the importance of supporting students in discovering their potential and strengths needed in their further professional development and achievements. Providing basic knowledge and experience needs to be sustained with development of abilities related to knowledge application, problem-solving, idea generation, psychological adaptation to social and other changes in their society. Creativity is considered as one of the influential phenomenon to be explored, especially in relation with personal life, development and achievements. Researchers from various scientific perspectives examine creativity analyzing its social, individual, informational contexts.

Contemporary educational systems faces importance of including creativity into teaching-learning process as one of the meaningful components [17-19].

Literature Review

Theories explaining relation between creativity and education

Analysis of various studies on creativity shows that the importance of a learning process, but also demonstrates lack of complex approach, when researchers consider creativity as related to children's education only or as a discovery process or result. Consequently, the need of applying the complex approach to explore creativity and its development with taking into consideration the educational, socio cultural, and individual factors is essential.

Some of researchers analyzed creativity in relation to human ability to produce ideas, to find original and unusual solutions, and to use non-traditional patterns of thinking. Furthermore, creativity can be considered as a basic human trait or as an ability to cope with difficulties, puzzles, and challenges in one's life, and as such, it is related to psychological and social adaptation [22]. Generally, creativity has to be described in terms of novelty, flexibility, and divergent thinking, but also productivity and applicability of gained knowledge and experience [15-16]. Creativity is defined as the development of influential, unconventional, and useful ideas [11].

E-learning Technologies in Modern Education

Technology in education process provides many advantages related to academic achievements as well as some disadvantages. Technology may support to enhance curiosity, creativity or other attitudes and skills development as well. It can improve student's attention, memory and imagination, but also may become a distractor in learning process [2].

Lee and Ryu [6] explored the relation between technology acceptance and learner success. They discovered that cognitive engagement has a moderating role

in relation between technology self-efficacy, perceived richness of technology, perceived learner control and perceived usefulness [8]. Other studies stated, that cognitive engagement is one of the most important outcomes of intrinsic motivation which can be measured based on interest, curiosity, attention, and creativity [17; 21]. In addition, perceived richness of e-learning technologies influences the cognitive engagement, being attractive for learner and being able to increase their intrinsic motivation [1]. It was discovered that technology self-efficacy has a powerful impact on learner's acceptance of technology use in education [10], and is predictive of perceived usefulness of technology [5].

Research conducted by Selim [12], provided a classification of e-learning success factors, among which was learner's perception of interactivity was an essential one. In other study it was stated that interactivity is highly valued by learners [14] and probably can influence perceived usefulness of technology in educational process. Continuously, enhanced interactivity is considered as a key point for effectiveness of technology-mediated learning [9], as well as for reinforcement of intrinsic motivation in learning [7]. Interactivity has to become an important feature of modern technology used in educational process [18]. However, high interactivity does not influence understanding [3] or prediction of achieving learning outcomes [13].

Methodology

Problem Statement and Purpose of the Study

This paper is aimed to explore the relationship between creativity and e-learning technology in a contemporary educational context. The main objective of education is to equip students with appropriate professional knowledge and experience, along with development of their essential cognitive and social skills [17]. The available studies in recent literature have been analyzed in order to answer the research questions to address research aims. Besides, the objective of

this study is also to provide descriptive insight and common understanding of mentioned above relationships with illustrative examples from examined domain.

Research Questions

To achieve the main goal of this study, the main effort was taken in order to seek the answers for the following research questions:

RQ1: How can we enhance creativity in contemporary education system?

RQ2: How e-learning technology can enhance the development of creativity among students?

Research Method

The research conducted by relevant literature review. The body of literature review includes studies that address related research problems. The main objective is to explore the relationship between creative abilities of young generation in educational domain and e-learning technology environment. Although the various research methods could be used to determine the relations among variables, authors concentrate to use the form of Critical Review approach.

Discussions and conclusions. The main purpose of this paper was to investigate the relationship between creativity and e-learning technology in a contemporary educational context. A meaningful part of this research is to explore the actual potential of the application of modern technology in education system in order to stimulate and develop creativity among students. It is vital to consider all the benefits, challenges and risks related to use of technology in the development of creativity in education.

The impact of technology in education is under exploration of educators, scientists and practitioners. However, the relation between technology and creativity enhancement remains not profoundly explored. Technology role in contemporary world and education is extremely significant, but use of it needs to be adjusted to the learning objectives and student's abilities.

Technology specifically in educational era could be accepted as fundamental construct of modern education. Creativity therefore has become one of the most important issue and skill in educational context. Although it is human behavior and skill, but it is related to technology integration as well. Recent technological developments in all areas related to education have tremendous impact on outcomes of successful deliveries for course contents and practices [20]. Technology as broad subject have many dimensions from infrastructure level to end user applications. Recent digital technologies such as social media-networking tools, cloud computing, big data analytics, data mining, 3D printing, artificial intelligence, machine learning, expert systems, web analytics, etc. have changed the structure of traditional education to modern educational stages.

Curriculum and educational practices are subject to change day by day with the results of educational developments. Students are more aware of their environment and more in communication with their peers. With the right motivation, students tend to be more enthusiastic and engaged with their studies, therefore successful in problem solving and applying the knowledge. Creative teaching alone is challenging approach and is not easy to implement in all areas of education. It is due to its complexity and mostly not structured form of daily practices. Technology and educational approaches with proven methods should be used together to complement each other. Henriksen et. all [4] argued that the best uses of educational technology related to creative mindset with openness for the new intellectual understandings. Moreover, teachers with new classroom technology have specialized involving an integrated framework of technological, pedagogical and content of knowledge.

In conclusion, creativity in education became a vital in order to be successful in a contemporary world. Various explorers applied a mixture of research methods to gather data explaining the role of technology in creativity enhancement in

educational sphere. Despite of great contribution in comprehension of the subject, there is significant disagreement between theorists in terms of creating informational background as well as between researchers in terms of empirical investigating the subject and providing a non-questionable interpretation of received data. Overall, it is necessary to remember that creativity is a complex phenomenon that developed from a combination of different variables and perspectives. Therefore, it is necessary to conduct more research on possibilities of psychological and technological tools involved into creativity reinforcement among students.

References

1. Baggio, B. G. (2010). Creating supportive multimedia learning environments. In H. Song & T. Kidd (Eds.), *Handbook of research on human performance and instructional technology*. Hershey, PA: IGI Global, 88–103.
2. Carr, N. (2010). *The shallows: What the Internet is doing to our brains*. New York, USA: W.W. Norton & Company.
3. Domagk, S., Schwartz, R. N., & Plass, J. L. (2010). Interactivity in multimedia learning: An integrated model. *Computers in Human Behavior*, 26, 1024–1033.
4. Henriksen, D., Mishra, P., & Fisser, P. (2016). Infusing Creativity and Technology in 21st Century Education: A Systemic View for Change. *Educational Technology & Society*, 19 (3), 27–37.
5. Hsu, M. K., Wang, S. W., & Chiu, K. K. (2009). Computer attitude, statistics anxiety and self-efficacy on statistical software adoption behavior: An empirical study of online MBA learners. *Computers in Human Behavior*, 25, 412–420.

6. Lee D. Y. & Ryu H., (2013). Learner Acceptance of a Multimedia-Based Learning System Intl. Journal of Human–Computer Interaction, 29: 419–437
7. Liaw, S.-S. (2008). Investigating students' perceived satisfaction, behavioral intention, and effectiveness of e-learning: A case study of the blackboard system. Computers & Education, 51, 864–873.
8. Ngai, E., Poon, J., & Chan, Y. (2007). Empirical examination of the adoption of WebCT using TAM. Computers & Education, 48, 250–267.
9. Proske, A., Narciss, S., & Körndle, H. (2007). Interactivity and learners' achievement in web-based learning. Journal of Interactive Learning Research, 18, 511–531.
10. Roca, J.C., & Gagne, M. (2008). Understanding e-learning continuance intention in the workplace: A Self-determination theory perspective. Computers in Human Behavior, 24, 1585-1604.
11. Runco, M. A. (2004), Creativity. Annual Review of Psychology, I, 657-687.
12. Selim, H. M. (2007). Critical success factors for e-learning acceptance: Confirmatory factor models. Computers & Education, 49, 396–413.
13. Sims, R. (2003). Promises of interactivity: Aligning learner perceptions and expectations with strategies for flexible and online learning. Distance Education, 24, 87–103.
14. Shen, C.C., & Chuang, H.M. (2009). Exploring User's Attitudes and intentions toward the Interactive Whiteboard Technology Environment. International Review on Computers and Software, 5 (2), 200-208.
15. Shubina I., (2017). Creativity in psychotherapy: the possibilities of its utilization. The European Proceeding of Social & Behavioural Sciences. XXII, 99-111. eISSN:2357-1330.
16. Shubina, I., (2011a). Life Long Learning – possibility or necessity? Announcements of Union of Scientists. Bułgaria, Sliven, 19, 190-194

17. Shubina I., (2011b). Learning with a project method at Polish universities and students competences. In Humanization of the educational process: collective work of scientific papers, red. W.I. Szoczenko. - Special edition 7, part II - Slowiansk: SDPU, 190-198.
18. Shubina, I. and Kulakli, A. (2018). Critical Thinking in Relation with Educational Technologies. Proceedings of ERPA International Congress on Education 2018, Istanbul, Turkey, 685-692.
19. Shubina, I., Kulakli, A. and Plakhotnik, O. (2018). Critical thinking and creativity: complimentary or dissonant relationship. London International Conference on Education by Infonomics Society. Cambridge, the UK, 192-195.
20. Shubina, I. and Kulakli, A. (2019). Pervasive learning and technology usage for creativity development in education. Journal of Emerging Technologies in Learning (iJET), 14 (1), 95-109.
21. Walker, C.O., Greene, B. A., & Mansell, R.A. (2006). Identification with academics, intrinsic/ extrinsic motivation, and self-efficacy as predictors of cognitive engagement. Learning and Individual Differences, 16 (1), 1-12.
22. Costa, S., Paez, D., Sanchez, F., Garaigordobi, M., Gondim, S. (2015). Personal factors of creativity: A second order meta-analysis. Journal of World and Organizational Psychology. 31, 165-173.