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Innovative Educational Technologies in the Educational Process

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ABSTRACT

In modern society, innovation technologies expand to almost every field of human activity, including such wide field as education. Innovation in education is a highly contentious issue. Education is sometimes perceived as one of the most conservative social systems and public policy fields.

Keywords:

education, innovation educational technologies, learning, pedagogical innovation theory, learning technologies, technological approach in education

Today, technologies used to improve and facilitate learning can be found everywhere. Leaving other contextual factors to the side – such as unequal access to technological innovations and connected technologies across schools and districts – we can only say that we have embraced technology in education when it is used for both teaching and learning. With the incorporation of technology into schools, the main purpose is to change how teachers and students gather, access, analyse, present and transmit information. This can democratize information in classrooms as well as help differentiate instruction, particularly for students with special needs. Innovation theory in education is a new field of scientific pedagogic knowledge; it is a paradigm of inseparable unity and interconnection of the three main pedagogic processes in the field of education: creation of novelties, their mastering and application. In other words, the subject of innovation theory is the studies of integration of development, mastering and integration of novelties. Innovation theory in education is an innovative process in the educational system,

innovative activity, novelty and innovative environment, in which the innovative processes take place. Innovative processes are considered in three main aspects – social-economical, psychological and organizational-regulatory. These aspects define the general climate and conditions, in which innovative processes take place and which either prevent or facilitate the innovative process. Moreover, innovative process does not have a spontaneous nature, but rather it is consciously regulated. Integrating the novelties is a highly significant new function of management. Innovative activity is nothing but a system of conducted measures for providing innovative process on a certain level of education. Novelties in education present themselves as creative exploration of new ideas and principles, which, in single cases, brings them to becoming typical projects containing the conditions for their adaptation and application. According to the activity types, there are pedagogical, supplying and administrative novelties. There are two types of innovative phenomena: pedagogical innovation theory (innovations in the

educational system) and innovative learning. While pedagogical innovation theory is related to restructuring and modifying, improving and changing the educational system or its separate parts, characteristics and aspects (creating new legal acts, new structure, models, learning paradigms, forms of integration connections, etc.), innovation learning is defined as a specific type of mastering the knowledge and as a product of conscious, goal-oriented and scientifically founded activity in the educational process. Innovative learning is currently replacing supporting learning. It is considered to be the educational system's reaction to the society's transition to a higher stage of development and reaction to the changed goals of education. Innovative learning is learning that stimulates innovative changes in the existing culture and social environment. It acts as an active reaction to the problem situations, which appear in front of each single person and the society in general. It is called to prepare not only a "learning person", but also an "acting. Moreover, all elements of supporting learning are present in the innovative process; the only question is the definition of the proportion between reproductive and productive, active and creative components.[1] How technology can be used to improve learning? The following are ways that technology could be better leveraged to improve learning: [2] With the widespread availability of student databases that are able to track individual progress, teachers are encouraged to identify learning objectives and differentiate instruction based on the needs of their students. Whenever teachers attempt to present instruction using technology, they should do so using a channel that is relevant to the objectives, the learning style, mode and the technology selected. When evaluating technology-based instruction, there needs to be appropriate evaluation techniques that are in line with the methods of instruction, objectives and the technology. Teachers can design follow-up activities when using technology to evaluate students' learning and the role technology played in that process. By accelerating the pace of innovation in learning sciences and technologies, the United States has the opportunity to close the achievement gap,

improve national competitiveness, and drive economic growth. Accelerating the pace of innovation requires a fresh approach to research and development and the infrastructure that supports it. The following image shows how research, product development, and adoption should be linked together in an education innovation ecosystem where each part of the process informs and improves the next. Figure 1. Education innovation ecosystem type[3] Unfortunately, the current research and development pipeline in education doesn't look like this. Instead of an interconnected ecosystem, there is a series of disjointed processes that don't inform or support each other. Research in learning science is disconnected from practical implementation. High development costs and limited investment funding hamper the commercialization of solutions. Impenetrable acquisition processes inhibit deployment of new tools and approaches. Lack of infrastructure and data driven improvements stifle adoption. All of this is particularly frustrating at a time when advances in technology and digital media hold the potential to dramatically reshape the way we approach instruction, assessment, and data use. An intentionally integrated innovation ecosystem, that links the different partners in an ongoing and iterative design process, can help remove the barriers that slow innovation in learning technologies. Overall, technology is central to many sectors of society and its integration into the education process has great promise for student learning. With technology, one can expect increased efficiency and effectiveness on both the part of teachers and students. Technology can also prompt pedagogical change and address issues that affect learning, teaching and social organization. Technology can therefore be seen as both a tool and a catalyst for change. Students should embrace technology for them to benefit and teachers should be open to introducing technology into the classroom to improve and innovate their teaching practice. Educational technologies are associated with increasing the effectiveness of education and upbringing and are aimed at the final result of the educational process: the training of highly qualified

specialists: – having fundamental and applied knowledge; – able to successfully master new, professional and managerial fields, to respond flexibly and dynamically to changing social and economic conditions; – possessing high moral and civil qualities in the conditions of innovative educational space.

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