

DIGITALIZATION OF THE EDUCATIONAL PROCESS AND THE SAMR MODEL

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Annotation: This article contains opinions and news about electronic education systems and their creation technologies. A new generation of students, global competition in the field of higher education, the development of e-learning - all this leads to a change in the education paradigm, to a new understanding of how people should and can learn.

Key words: Higher education, Non-formal education, learning platforms, teaching methodology,

In recent years, the university has been undergoing a digital transformation, consisting in the adoption of a new model of activity based on internal renewal, understanding the need for changes and innovations in the university based on the use of advanced digital technologies. An important part of the digital transformation of the university is the digitalization of the educational process.

The use of e-learning and digital educational resources is a strategic priority for the development of the university and a condition for creating competitive educational programs based on the use of effective pedagogical technologies. The penetration of digital technologies and resources into the educational process is based on the following prerequisites.

- The educational process should be based on mastery (creativity) and integrate the acquisition of disciplinary knowledge with education, research activity and practical training.
- Educational policy should include the use of digital didactics, adaptive learning models and the recognition of non-formal learning outcomes.
- Educational technologies should guarantee the quality of education and the formation of demanded competencies.
- E-learning is aimed at increasing the efficiency and accessibility of learning, involves the use of open educational resources, and corresponds to the desire of modern youth to "always be in touch".

The use of educational analytics (intelligent analysis of educational data) when using e-learning is aimed at better understanding the learning process, substantiating management decisions to improve the quality and effectiveness of learning. The digitalization of the educational process leads to changes that are made possible by the introduction of modern digital tools. However, such changes may be qualitatively different.

To measure the extent of these changes, it is convenient to use the SAMR model (Substitution, Augmentation, Modification, Redefinition), which was developed by Dr. Ruben Puentedura (Dr. Ruben Puentedura).

The model is a hierarchy of four levels of integration of digital technologies (DT) into the educational process: from simple replacement of traditional tools with digital ones without changing functionality to the level at which the use of digital technologies opens up new, previously inaccessible opportunities and helps to solve new, previously unsolvable or difficult solved pedagogical tasks:

(1) Substitution. At the first level, the traditional tool/means of educational work is replaced by a new (digital) one. At the same time, the change in the functionality of the new digital tool turns out to be minimal, and the educational process, in fact, does not change.

Substitution example: transition from reading text in a printed textbook to reading it on a computer screen (tablet, smartphone, etc.).

(2) Improvement (Augmentation). At the second level, the traditional tool/means of educational work is also replaced by a new (digital) one. In this case, the functionality of the new tool is wider than the functionality of the previous tool, which makes it possible to enrich the educational process and expand its capabilities.

An example of improvement: the transition from the presentation of material on paper posters to the demonstration using a multimedia projector, which greatly expands the possibilities of its visual presentation.

(3) Change (Modification). At the third level, the traditional tool/means of learning activity is also replaced by a new (digital) one. But at the same time, its functionality changes significantly, which makes it possible to significantly improve the educational process. The traditional list of tasks of educational activity is expanding. Digital technologies make it possible to formulate and solve these problems in a new way.

Change example: Students create videos, interactive timelines, etc. i.e. we are talking about visibility, independently formed by students in the course of mastering new material, in the development of educational projects, in individual and team independent work, etc.

(4) Redefinition. At the fourth level, the functionality of new (digital) tools/means of educational work turns out to be much wider than the functionality of traditional tools. This allows you to transform the educational process or build it on new principles. At the same time, the list of traditionally solved tasks is not only expanding, but also being transformed. Digital transformations create conditions for solving such problems that could not be solved without their application.

An example of transformation: the transition to a personalized organization of educational activities, in which digital tools, adaptive digital educational materials, information systems for the flexible formation of individual plans for educational activities allow for the complete assimilation of knowledge; in addition, such tools allow building individual educational trajectories, building training taking into account the interests, characteristics and capabilities of each student.

The introduction of digital transformation at levels 1-2 may facilitate learning activities, but does not actually change the learning process. The use of DH is routine here and, as experience shows, does not lead to noticeable improvements in educational outcomes.

The introduction of digital transformation at levels 3-4 is associated with a change in the educational process. Here, the use of digital transformation is creative, innovative, and makes it possible to solve previously unsolvable tasks (for example, to provide students with evidence-based competencies of the 21st century, to develop their abilities for independent learning activities, for continuing their education throughout their lives). The transformation of the educational process, together with the innovative implementation of digital transformation at levels 3-4, can lead to a noticeable improvement in traditional and the formation of qualitatively new educational results, the development of the potential of each

student. It is these transformations that are an integral part of the digital transformation of education.

The SAMR model is in good agreement with B. Bloom's taxonomy of educational goals. As a result of such "integration", it becomes obvious that the higher the level of cognitive abilities that are required to be formed in students, the higher should be the level of integration into the educational process of the corresponding digital transformations.

For a long time, at VVGU, as in most other universities, the introduction of DT, as a rule, took place only at levels 1 and 2. As a result, the educational process turns out to be focused on the routine use of DT. Therefore, it is difficult to expect that their implementation will lead to an increase in the quality of education and the achievement of new educational results. Therefore, the SAMR model should form the conceptual basis for the further digital transformation of the educational process at the university.

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