

ADAPTIVE LEARNING OPPORTUNITIES OF THE FUTURE PRIMARY SCHOOL TEACHERS

^aNATALIA VERSHININA, ^bSVETLANA BABINA,
^cSVETLANA LYUGZAEVA, ^dNADEZHDA
SHCHEMEROVA, ^eKARINA MALYUKOVA

^{a,b,c,d,e}Mordovian State Pedagogical University named after
M. E. Evseviev, Studencheskaya str., 11 A, Saransk, Russia,
430007

email: ^aversok3@mail.ru, ^bfotina73@mail.ru,
^clugsaeva@mail.ru, ^dnadya.shem@mail.ru,
^emalyukova2002@inbox.ru

Acknowledgements: The research was carried out within the framework of a grant to conduct research on priority areas of scientific activity of partner universities in network interaction (Ulyanovsk State Pedagogical University named after I. N. Ulyanov and Mordovian State Pedagogical University named after M. E. Evseviev) on the topic "Adaptive learning in a modern educational environment".

Abstract: This article analyzes the possibilities of using adaptive learning in the professional training of a future primary school teacher on the example of Mordovian State Pedagogical University named after M. E. Evseviev. The authors believe that the future of education lies in adaptive learning, which provides an opportunity to efficient individual trajectory plotting for the involvement of each student. It is argued that the introduction of e-learning in combination with the use of interactive technologies and elements of traditional learning enables future primary school teachers to become competent competitive specialists, which is confirmed by rating and monitoring indicators and indicate the constructiveness of the implementation of the presented model of adaptive learning in the educational process of the university.

Keywords: adaptive learning, e-learning, personalization, primary school teacher, pedagogical activity.

1 Introduction

The modern system of education is going through incessant changes, additions, transformations; today it has become one of its characteristics that are being comprehended and described in real time. In this regard, modern universities face the most difficult task of training a graduate who is able to constantly and freely compete with every member of the labour market.

According to the authors of this study, adaptive learning can contribute to the competitiveness of a graduate, which enables each student to improve his educational results, since adaptation implies the adaptation of the body to circumstances and environmental conditions.

All of the aforementioned points to the undoubted significance and relevance of the study. From the standpoint of improving the quality of education, it becomes clear that the pedagogical design of the educational process of university students is activated on the basis of adaptability, which comprehensively takes into account the dynamic characteristics of students that change during the study of the discipline, including the personal needs and goals of students, which we will call active adaptiveness.

2 Literature Review

The analysis of various sources shows that the future of education lies in adaptive learning, where the student gets the opportunity to study what interests him in an alternative way in order to interest others in it.

Back in the XVII century, Yan A. Komenskij (1982) had ideas that became the basis of adaptive learning. In the 50-60 years of the XX century, adaptive courses were developed by B. F. Skinner, A. K. Crowder, G. Pask, the ideas of these scientists were most widespread in the XXI century.

Adaptive learning enables to create effective conditions for the development of individual characteristics of future teachers. According to S. Oxman and V. Wong (2014), the goal of adaptive learning is to increase the level of educational results of students. G. Natriello (2017) writes about the personalization of education by adapting learning opportunities and educational practices to the individual inclinations of students. According to R. H. Gohar, R. M. El-Ghool (2016), adaptive learning is a

personalized system that meets the needs and abilities of students based on a strategy that supports and helps students overcome their problems. P. Moskal, D. Carter and D. Johnson (2021) note that adaptive learning is one of the forms of personalized learning. In the study of D. Catalan (2019), the effectiveness of technologies of online adaptive construction of the educational process for students' learning and academic performance was studied. A study by M. Coffin and J. Pérez (2015) aims to compare the effectiveness of the adaptive learning method and the objective assessment method. F. Zarrabi and H. Bzorgyan's works (2020) are devoted to the study of the effectiveness of argumentative writing of students on the Internet. Allen and McNamara (2016) discuss the integration of adaptive learning platforms into writing courses. S. A. Elborosly, R. A. Almudzhali (2020) point to the possibilities of improving argumentative essay writing through adaptive learning.

Russian authors also do not ignore adaptive learning. So, K. A. Vil'kova, D. V. Lebedev (2020) highlight the pros and cons of such training in the higher education system. E. V. Eliseeva, S. N. Zlobina (2011) present adaptive learning as a high-level technology for organizing professional training of students at a university. I. A. Krechetov, V. V. Romanenko (2020) demonstrate methods and principles of its implementation. Dagbaeva N. Zh., Selverova L. O. (2016). V. A. Shershneva, Yu. V. Vajnshtejn, T. O. Kochetkova (2018) point to the importance of electronic adaptive learning in the educational process. N. V. Vershinina, S. A. Babina, S. I. Lyugzaeva, L. A. Serikova (2020) point to the importance of personalization of the learning process for the formation of information culture of future primary school teachers. L. A. Safonova, I. V. Voinova, S. I. Prochenko (2020) write about the possibilities of using elements of adaptive learning in the training of future teachers.

Problems and prospects of adaptive learning in school are discussed in the writings of M. F. Samofalova (2020), the study of V. S. Budinkova (2008), N. P. Turinova (2006) reveal the possibilities of a personal trajectory plotting, individualization of the educational process. M. V. Antonova (2019) stresses the importance of personalization in educational work with the junior students.

Despite numerous publications devoted to the problems of adaptive learning, today there is no single integrated approach for the design and implementation of adaptive learning systems. The publications share a common view on the structure of adaptive learning, but differ in terms of its implementation. A characteristic feature of adaptive learning is the possibility of automation, and the leading principle is its personalization. Following Russian and foreign researchers, we adhere to the opinion that adaptive learning is the most effective form of personalization of learning. To do this, adaptive learning systems separate what students already know from what they do not know, and use the characteristics of the students themselves to offer suitable learning material.

3 Research Methodological Framework

The purpose of the research is to study the possibilities of using adaptive learning in the process of training a future primary school teacher. Research objectives are: to study the theoretical prerequisites for the use of adaptive learning in the educational space of a pedagogical university; to demonstrate the main directions of work on the trajectory plotting of professional development of a future primary school teacher in the context of the use of adaptive learning, in particular: to describe the practical application of e-learning in the system of training of a future primary school teacher, forms and methods of mixed (e-learning and traditional) learning, to present the possibilities of distance technologies in adaptive learning.

The following research methods were used in this article: theoretical analysis, generalization and interpretation of scientific data, study and generalization of pedagogical experience, method of pedagogical design (planning, modeling and implementation of classes using adaptive learning technology), analysis of the data obtained, classification, synthesis, generalization.

4 Results and Discussion

According to A. J. O'Connell (2018), "adaptive learning, at its core, is learning that adapts to the student". V. P. Dobrica, E. I. Goryushkin (2019) believe that this is a teaching methodology designed to provide personalized learning, the purpose of which is to provide effective, efficient and individual learning trajectories for the involvement of each student. Analysis of sources has shown that a pronounced feature of adaptive learning is its automation, while personalization becomes the fundamental concept here, that is, the separation of what students know and do not know, taking into account their personal characteristics. On the basis of the data, the preferred information is offered, the necessary competencies are formed. The use of adaptive e-learning provides an opportunity to build an individual trajectory of students' training, to obtain proper learning results in a short time period with minimal costs, since it involves the allocation of the essential and preferable by difficulty individually for everyone. This approach requires the adaptation of the educational process to the learner. It is possible to adjust the educational process to the listener with the use of e-learning.

Interactivity, a variety of ways to consolidate knowledge, the use of the studied topics with a possible change in their sequence and content, a variety of educational materials, control of intermediate and final results is not a complete list of advantages of e-learning, which enables to introduce adaptive learning into the educational process, to achieve effective results.

In Mordovian State Pedagogical University named after M. E. Evseviev (MSPU), an adaptive educational trajectory is being built using e-learning technology in the process of professional training of future primary school teachers (within the framework of this study, the term e-learning is used in relation to blended learning, where "the educational process combines direct subjective interaction of teacher-student and the practice of distance learning," as S. R. Hiltz (2005, p. 60) wrote in his writings. The concept of "e-learning" is considered to be a way of subjective interaction "teacher-student", "teacher-student-student" through modern information and communication technologies in the framework of blended learning.

The practical application of e-learning in adaptive training of future primary school teachers at Mordovian State Pedagogical University named after M. E. Evseviev is described in sufficient detail in the works of S. A. Babina, N. V. Vinokurova (2019) and S. A. Babina and N. V. Vershinina (2021). Here are examples from the practice of teaching using adaptive learning with e-learning in classroom and independent work in the context of training future primary school teachers. At the stage of perception of the educational material, problem lectures, discussion seminars, Open Space multimedia presentations, illustrative videos or their fragments are used. As an independent work, it is offered in electronic libraries, the content of which is represented by electronic textbooks and dictionaries, video lectures. Interactive technologies (case-study; brainstorming session, etc.) and web technologies (working with social networks, online translators, websites of scientific libraries and specialized departments of universities on the Internet) are widely used at the stage of comprehension of educational material and the formation of concepts, and for independent work of students, exercises in test simulators, solving problems from electronic textbooks are offered. The stages of consolidating and improving knowledge, the formation of skills and abilities, the formation of practical knowledge and methods of action are represented by the technologies "Aquarium", Basket Method, video clips of the Russian language lessons on YouTube are analyzed, students create their own video tutorials

using Google services. At these stages, the training is especially personalized and transformed: students perform tasks related to professional activities (lesson preparation, research work), while the tasks are illustrated using various programs: Microsoft PowerPoint, Prezi, Kahoot.it; on-screen camera, Camtasia, Webinaria, etc. The rating system of current and final control allows monitoring educational activities. The use of information tools (search engines, Google Academy, forum, chat, e-mail, Google calendar, journal of point-rating assessment of knowledge) also contribute to the optimization and personalization of the professional training of future primary school teachers.

At each lesson, individual and group forms of work are used, which are implemented in interactive technologies (design and research activities, problem-dialogic, information and communication, case technologies, technology for the development of critical thinking, moderation, etc.). In the classroom, students analyze and critically evaluate scientific information from various sources. In the course of practical activities (project defense, discussions, role-playing games, production of speech situations, text construction), they build a strategy of oral communication using verbal and non-verbal means, show the level of proficiency in the system of norms of the modern Russian literary language. Future primary school teachers perceive, analyze and critically evaluate information, begin a dialogue, demonstrate the ability to clearly and competently formulate questions, defend their point of view. This is how interactive non-digital forms of learning are implemented.

The popular Moodle distance learning system helps to organize high-quality education at a distance, which enables to create web courses and fill them with educational content (interactive lectures and assignments, text pages, dictionaries, links, files). The platform's capabilities are easily transformed to meet the needs of a group or individual. The program is functional, accessible, aimed at bringing distance learning closer to full-time format and teacher-student interaction, personalization of learning. To organize lectures and practical classes, the BigBlueButton service is used, which supports the sharing of audio and video, slides, chat, screen, multi-user whiteboard, surveys, discussion rooms in real time, recording sessions and playing them for later viewing and enables to actualize adaptive learning, in addition, online video conferencing promotes emotional contact, so necessary in the process of distance learning.

So, mixed adaptive learning is implemented by the interconnection of online and offline components. Classroom work is mainly of a consulting nature and is aimed at analyzing problem situations, presenting practical lessons, the results of group project activities, offline monitoring and assessment of the level of formation of educational results. Online work is aimed at the formation of competencies in the performance of tasks and the implementation of project activities.

5 Conclusion

The main direction in the context of the introduction of adaptive training of future primary school teachers in MSPU was the introduction of e-learning. E-learning does not become a complete replacement for the traditional classroom and extracurricular work of a teacher and a student. A significant feature of adaptive learning is the ability to effectively complement the traditional forms of organization of the educational process with the competent use of electronic educational resources. This is especially important in the context of professional training of future teachers, when in the learning process they are convinced by their own experience of the importance of the role of a teacher who not only transmits knowledge, but also helps to solve problem situations, assess, support a personal "human" plan, which no electronic resource can do.

The experience of implementing adaptive learning in MSPU enabled us to highlight the transformation of the roles of participants in the educational process:

- the teacher organizes and directs the cognitive activity of students, ensuring independence and activity; such cooperation helps students in self-realization and self-affirmation;
- the teacher and students share responsibility for learning outcomes, the fulfillment of educational tasks leads future teachers to realize the importance of learning outcomes for personal and professional growth, to the formation of high internal motivation;
- the use of e-learning enables the teacher to maximize the use of interactive technologies, research and independent work, which enables students to apply their knowledge and skills in similar professional situations, helps to become competent and competitive;
- the teacher uses reflexive management of students' cognitive activity, conducts rating and monitoring activities, the student shows readiness for introspection and self-assessment, gets the opportunity to independently control and adjust the level of his personal and professional development using e-learning tools.

Monitoring indicators, positive feedback from practice managers and employers about graduates of Mordovian State Pedagogical University named after M. E. Evseev indicate the constructiveness of the implementation of the presented model of adaptive learning in the process of professional development of the future primary school teacher.

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Primary Paper Section: A

Secondary Paper Section: AM, AN