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METHODOLOGY FOR DEVELOPING INFORMATION-RESEARCH AND INDEPENDENT LEARNING SKILLS IN STUDENTS

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Bazarbayeva Aynura Raximnazarovna
1st year of Master's degree
Nukus state pedagogical institute named after Ajiniyaz
(Republic of Karakalpakstan, Nukus)

Abstract

This article examines the formation of self-directed learning skills in students of a pedagogical university within the context of a student-centered educational approach. A theoretical analysis of approaches to self-education was conducted, along with an experimental study that included surveys and the phased implementation of a modular learning system for students in their 1st through 4th years. For junior students, the emphasis was on working with specialized literature, taking notes, and planning. For senior students, the focus shifted to synthesizing information, preparing reports, and completing research assignments. The final assessment demonstrated an increase in the proportion of students with high and medium levels of self-directed learning skills, and a corresponding decrease in the proportion with a low level. At the same time, underdeveloped skills in information synthesis and navigating the flow of information were observed, which necessitates targeted efforts at all stages of professional training. The conclusion is drawn that the continuous development of self-directed learning skills is essential throughout the training process for future teachers.

Keywords

self-education, self-development, professional competence, student-centered education, modular learning, note-taking, information literacy, teacher training.

Continuous self-education and self-development are essential qualities for a modern educator, ensuring their ability to adapt quickly, their creative autonomy, and their capacity to work with participants of any socio-psychological status within the educational process. In the structure of professional competencies, reflexive competence—that is, the skill of evaluating the results of one's own activities, independently analyzing, and purposefully developing one's educational-methodological and professional actions—is of fundamental

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importance. The effective performance of professional duties (participating in the development and implementation of an educational institution's development program, systematically analyzing lesson effectiveness, and developing and implementing curricula) is impossible without the foundational skills formed during the school years and without the motivation for self-directed learning. Therefore, students' self-directed learning is considered a prerequisite for the formation of a future teacher's professional competence.

Pedagogue A. Y. Ayzenberg defines self-education as a purposeful, voluntary, and independent cognitive activity, managed by the individual and aimed at satisfying their interests and needs related to various fields of knowledge and the meaning of life. The main features of self-education are the freedom to choose problems, independent work with sources, and the variability of the scope of knowledge, which depends on the level of interest in the subject.

The self-management of self-education is manifested when the subject acts simultaneously as both the object and the manager of their own learning activity. The individual's independence and intellectual activeness are the primary conditions for this activity, which demands willpower, consciousness, and organization, and serves as a productive mechanism for personal development, aligning with the goals of personality-oriented education.

The role of willpower in self-education has not been sufficiently studied; in practice, the most common reason for abandoning established educational plans is considered to be weak willpower and a lack of self-control.

In psychological and pedagogical literature, two main approaches to self-education are distinguished: 1. as the purposeful, planned, and independent work of a teacher aimed at improving their professional skills; 2. as the personal process of systematically perfecting one's own personality and professional activity.

The second approach is broader in meaning and reflects the personal nature of a teacher's self-education; our research is also conducted from this very position. Theoretically, the self-education of a prospective teacher is described as a self-managed cognitive activity aimed at the formation of professional competence and personal development. Self-development is understood as the process of purposeful personal change, during which requirements are internalized and transformed in accordance with one's level of consciousness, abilities, and established needs.

Readiness for self-education is based on a desire for knowledge, a combination of intellectual and organizational abilities, as well as the capacity to select, evaluate, and effectively use information.

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Research Objectives

1. To determine students' attitudes towards self-education and self-development.

2. To assess the mastery of self-education methods.

3. To determine the level of development of self-education skills.

4. To develop ways to encourage self-education in professional training.

For this purpose, a survey was conducted among 1st to 4th-year students of the Faculty of Pedagogy at the P. P. Ershov Ishim Pedagogical Institute, and the development of the relevant skills was assessed.

The results show that although the majority of students (73%) recognize self-development as an important factor in professional growth, their practical skills in self-education are poorly developed. Specifically, they face difficulties in searching for and selecting information, taking notes, identifying main ideas, and systematizing material; their planning is inconsistent, self-control is diminished, and their proactivity in preparing presentations is low. Students often point to external obstacles (lack of time, high academic workload, authoritarianism of instructors), while internal factors—such as low motivation and undeveloped skills—are seldom acknowledged. Among 45.31% of students, the level of development of self-education skills was found to be low, which hinders the success of their self-education activities.

In the process of professional training, targeted measures are necessary to form motivation, develop educational-organizational skills, and foster self-monitoring.

Practical readiness for self-directed learning is based on a complex of knowledge, intellectual and organizational skills, as well as the ability to select, evaluate, and effectively use information. The study set the following objectives: to determine students' attitudes toward self-directed learning; to assess their level of mastery of relevant methods; to determine the level of development of self-directed learning skills; and to develop ways to encourage them in professional training.

Within the framework of the experimental work, a phased training system was organized: for 1st and 2nd-year students, this involved working with literature related to their specialty and planning their academic activities; and for 3rd and 4th-year students, it involved forming the necessary skills for preparing reports, abstracts, and articles. The established methods are integrated into the set of professional and research skills and serve to substantiate, analyze, and plan personal activities, thereby contributing to the formation of personal-related functions.

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Its practical application involved students individually developing their own academic work plans and being provided with a list of educational and didactic resources. This ensured their orientation within the material and their purposeful progress towards professional competence.

Students were given topics and problem-based questions for preliminary preparation for lectures; for example, when discussing the topic "Defining Concepts. The Structure of Concepts," they were asked to find definitions from planimetry, which stimulated interest and a purposeful search for information.

Following this, training on how to write notes was conducted: exercises on identifying the main idea within a paragraph were gradually made more complex by increasing the volume and number of fragments; finally, a set of notes on the topic "Algorithms and Their Properties" was independently prepared, which was then checked and discussed.

To form systematization skills, students filled in tables according to the stages of problem-solving (stage name; purpose; methods), and for the development of planning, the modular structure of the course was used: each student was given a module containing LE 0 (didactic objectives, basic concepts, principles), theoretical and practical materials, and a final test, which allowed them to see their learning trajectory and master the methodology of self-directed learning.

Familiarization with the modules took place during practical classes and a special course conducted under the module-rating system; students learned to create a personal plan for mastering each module. Based on the results of the entry test, they analyzed their mistakes, compared their gaps with the content of the next module, and set learning objectives by answering questions such as: what gaps need to be filled and how; how this relates to the upcoming material; what knowledge and skills need to be formed; and what result is expected. In the initial stage, students frequently sought advice from the teacher; developing a plan together based on an example helped to overcome difficulties and increase independence in subsequent work.

Practical methods included preliminary preparation for lectures, exercises to identify the main idea, creating notes and tables, filling out module plans based on the entry test, and developing individual study plans together with the teacher.

By the end of the year, students had acquired skills in searching for and structuring information, planning and self-monitoring their academic activities, synthesizing information from multiple sources, as well as presenting the results in the form of reports and abstracts.

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Observations showed that by the end of the year, 3rd and 4th-year students had mastered the basic skills of self-directed learning activities, which contribute to the development of professional competence.

In the final stage, a concluding assessment was conducted on the formation of self-study skills among 1st to 4th-year students; intermediate and final results were evaluated to test the hypothesis about the necessity of organizing self-study activities at all stages of professional formation.

The growth of indicators was not significant: the share of students with a high level increased by 1.56%, and those with a medium level by 6.25%. The main reason for this is the insufficient formation of several skills: defining the essence of a problem; synthesizing information from multiple sources and drawing conclusions; navigating the flow of information and finding relevant sources; and condensing and logically summarizing information.

Conclusion: A comparison of the initial and final indicators revealed that the proportion of students with a high level of self-study skills increased by 8.6%, the proportion of those with a medium level increased by 12.5%, and the proportion of students with a low level decreased by 21.09%. As self-study skills became more established, students' independence in completing reports, coursework, and individual projects also increased.

Correlation analysis showed a significant positive relationship between the level of self-study skills (criterion A1) and the level of professional competence (criterion A2): r=0.73, which confirms the close interconnection between these indicators.

Therefore, the formation of self-study skills should be carried out continuously throughout all stages of a future teacher's professional training.

REFERENCES:

1.Kulyutkin Yu. N. Psixologiya obucheniya vzroslix / Yu. N. Kulyutkin. — Moskva : Prosveshenie, 2005. 128.

2.Mamontova T. S. Formirovanie professional'no-metodicheskoy kompetentnosti budushego uchitelya matematiki v pedvuze sredstvami kursa «Teoriya i metodika obucheniya matematike» : dissertasiya ... kandidata pedagogicheskix nauk / T. S. Mamontova. — Omsk : OmGPU, 2009. 220.

3.«Obutverjdenii professional'nogo standarta «Pedagog (pedagogicheskaya deyatel'nost' v sfere doshkol'nogo, nachal'nogo obshego, osnovnogo obshego,

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srednego obshego obrazovaniya) (vospitatel', uchitel')». Prikaz Ministerstva truda i sosial'noy zashiti RF № 544n ot 18.10.2013 g. — Moskva, 2013. 20.

4.Yansufina Z. I. Sovershenstvovanie metodicheskoy podgotovki budushego uchitelya matematiki v pedvuze na osnove innovasionnix podxodov k obucheniyu : uchebnoe posobie dlya studentov pedvuzov / Z. I. Yansufina. — Tobol'sk : TGPI im. D. I. Mendeleeva, 2004. 156.