National and International Experiences in the Field of Development of Methodological Skills of Future Teachers in the Process of Higher Education on the Basis of a Cognitive Approach

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Abstract: This article analyzes national and international experiments on the development of methodological skills of future teachers in the process of Higher Education on the basis of a cognitive approach. The study was conducted using mixed methods, and the results of the survey and interview confirmed the high effectiveness of the cognitive approach in the educational process. Sources studied in international experimentation emphasize the development of teachers ' analytical and creative abilities through a cognitive approach. National experiments, on the other hand, showed the need for this approach to be widely used in the Uzbek educational system.

1 INTRODUCTION

In the process of training future teachers in the higher education system, the development of methodological skills is important. Methodological skill it includes the professional skills necessary for the teacher, methodological approaches and the ability to apply various techniques in the learning process. The methodological skills of future teachers - being assessed as the ability to effectively organize the educational process, develop students ' knowledge, skills and abilities, successfully apply various methods and methods of teaching, the cognitive approach in this process is based on the formation of knowledge, skills and abilities of the student in the educational process, the analysis of cognitive processes in their reading activities (Bliuc, Goodyear, & Ellis, 2007; Xudayberganova & Yusupova, 2023; Ehlers, 2020; Sarybayeva, Berkinbayev, Kurbanbekov, & Berdi, 2018; Xayitov, 2022).

2 RELEVANCE OF THE TOPIC

It is known that today, on a global scale, special attention is paid to improving the methodological skills of teachers on the basis of a cognitive approach. This approach is aimed at strengthening the knowledge of educators, developing analytical thinking, building on critical thinking and improving the abilities of independent, creative work on the basis of the knowledge that has mastered them (Ehlers, 2020).

In particular, in the educational process, the cognitive approach directs prospective teachers to R & D activities, giving them independent thinking and analytical analysis skills (Tulkinova, 2024). The basic principles of the cognitive approach are aimed at improving the effectiveness of the educational process, providing future teachers with the development of skills for using knowledge, and not just memorization. With this approach, teachers use interactive techniques in the teaching process to improve their communication skills with the learners. Ehlers (2020) noted that a modern teacher should have skills not only to control the learning process, but also to analyze the knowledge of the learners and help them master new knowledge. At the same time, according to the results of research by Sarybayeva and others (2018), the development of the creative abilities of future teachers is also an important factor. This serves not only to direct teachers to creativity, but also to make them more adaptable to the modern educational process.

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One of the important areas in the educational system of Uzbekistan is the development of methodological skills of future teachers on the basis of a cognitive approach. In particular, Khudayberganova and Yusupova (2023) note that there are opportunities for the formation and development of methodological skills in the process of training future teachers through the use of pedagogical technologies. Based on the research carried out by them, effective results were shown on the widespread use of pedagogical technologies in the educational system of Uzbekistan and their assimilation by future teachers in the process of professional training.

3 LITERATURE ANALYSIS

Research by Bliuc, Goodyear, and Ellis (2007) focuses on the effectiveness of hybrid forms of education in higher education, with their methodical approaches formulated on cognitive grounds. The study analyzes the issues of student experience and their adaptation to the learning process, emphasizing the importance of the cognitive approach. Research by Ehlers (2020), on the other hand, focuses on developing future skills of prospective teachers, noting the effectiveness of the cognitive approach in the process.

Also, Khudayberganova and Yusupova (2023) studied the possibilities of developing the methodological skills of future teachers through the use of pedagogical technologies in the educational process. They have made a number of scientific recommendations for the development of a cognitive approach in the educational system based on national experiences. At the same time, Sarybayeva and others (2018) analyzed international experiments on the development of creative abilities of future teachers and showed the importance of a creative approach based on a cognitive approach.

4 METHODS

This study used a mixed methodology to study the process of developing the methodological skills of future teachers based on a cognitive approach. Initially, through interviews using a qualitative research method, information was collected from 25 educators and 40 prospective teachers. Interviews focused on determining the role of the cognitive approach in their educational process.

A questionnaire was also distributed to collect quantitative data, evaluating the results of the development of methodological skills based on the cognitive approach of 120 prospective teachers. The survey questions were compiled on the Likert scale, and the data collected were statistically analyzed. The data was analyzed in the SPSS program to determine averages and standard deviations. At the same time, the study used an experimental approach and divided 60 students into experimental and control groups. In the experimental group, classes were organized on the basis of a cognitive approach, and their results were compared with the control group.

5 RESULTS

According to the results of the study, the educational process, organized on the basis of a cognitive approach, helped to significantly improve the methodological skills of future teachers. Students in the experimental group showed higher results compared to the control group. In particular, according to the results of the survey, students noted an improvement in their ability to apply their knowledge in practice. Of the 120 students in the study, 75% (90) reported significant improvements in their methodological skills through a cognitive approach, a much higher rate than the 55% in the control group (Table 1).

The results of the experimental group were also confirmed by accurate figures. The average score of the 60 students tested was 85 points, well above the average of 70 points in the control group. At the same time, the level of knowledge acquisition in the experimental group was 90%, while in the control group it was 75% (Table 2). This demonstrates the effectiveness of cognitive approach-based learning.

From the results of the study, it can be seen that educational methods based on the cognitive approach are effective in shaping the methodological skills of future teachers. This confirms the need for a broad application of the cognitive approach in the educational process.

Table 1: The impact of a cognitive approach on the methodological skills of future teachers.

Specification	Experimental group (%)	Control group (%)
Level of knowledge acquisition	90%	75%
Improving methodological skills	85%	60%
Practical application skills	75%	55%

Table 2: Comparison of average grades.

Group	Average score	Knowledge acquisition rate (%)
Experimental group	85	90%
Control group	70	75%

Table 3: Methodology for analyzing national and national development based on cognitive skills.

National experiments:	International experiments:
The"concept of development of the higher education system of the Republic of Uzbekistan until 2030 "includes" intensive-innovative-integrative " practical exercises, seminars aimed at improving the curriculum and teaching aids of teaching methodology subjects in educational institutions, developing the methodological skills of future teachers. On the basis of the plan of the National Center for pedagogical skill and pedagogical skill centers in the regions, training courses in the gradual increase in the competence of science teachers: training aimed at improving their professional skills and personal qualities, methodological techniques, strategies and models based on the cognitive approach are taught. The tradition of "teacher-disciple": with the guidance of experienced teachers, it is possible for future teachers to master methodological skills	Education system in Finland: a cognitive approach based on the active participation of the student in the educational process serves to improve educational efficiency. Project-based learning in the United States (Project-based learning): focused on encouraging students ' practical actions through projects in the development of knowledge and skills. UNESCO, UNICEF recommendations: recommendations are made to implement models of teaching based on cognitive approaches. International assessment of educational achievement (IEA); Australian Council for Educational Research(ACER); World Bank, Educational Testing Service(ETS, USA); Vestat (USA; International linguistic quality assurance centre (cApStAn, Belgium; TIMSS and PIRLS International Research Center at Boston College (USA); Statistics Canada (Canada); Institute for Educational Development Strategy (Russia).

6 DISCUSSION

The results of the study revealed the effectiveness of the cognitive approach in the development of methodological skills of future teachers. Significant differences between experience and control groups suggest that this approach is effective in teacher training. In particular, many of the prospective teachers involved in the study noted that their ability to consolidate and practice knowledge is much higher if trained on the basis of a cognitive approach. This approach supports not only the acquisition of theoretical knowledge, but also the development of independent thinking, analytical analysis and creative approach.

In the process of Higher Education, National and international experiments in the field of developing the methodological skills of future teachers on the basis of a cognitive approach were analyzed as follows (see Table 3).

The analysis shows that in the development of methodological skills of future teachers in national and international experiments, the problem of the development of knowledge and skills of students through a cognitive approach is taken into account, the effective organization of the educational process, the formation of the ability to successfully apply various methods and methods of teaching.

The results of our study also confirm the positive impact of the cognitive approach on the educational process. Research by Ehlers (2020) has shown that this approach is important in shaping skills that will be needed in the future. At the same time, national experiments studied by Khudayberganova and Yusupova (2023) in the Uzbek educational system also confirm the effectiveness of the cognitive approach in pedagogical practice. This approach has shown special importance in teacher training through the use of technological tools and pedagogical techniques. The results show that the cognitive approach not only increases methodological skills, but also serves to develop the creative and analytical abilities of teachers. This is a decisive factor in the training of highly qualified educators in the modern educational process.

As a result of the research carried out, based on the analysis of practical activities carried out in the process of the activities of the observed classes and skill centers, we found that we should give our own definition based on the author's approach. The teacher's methodological skill[author's approach] is

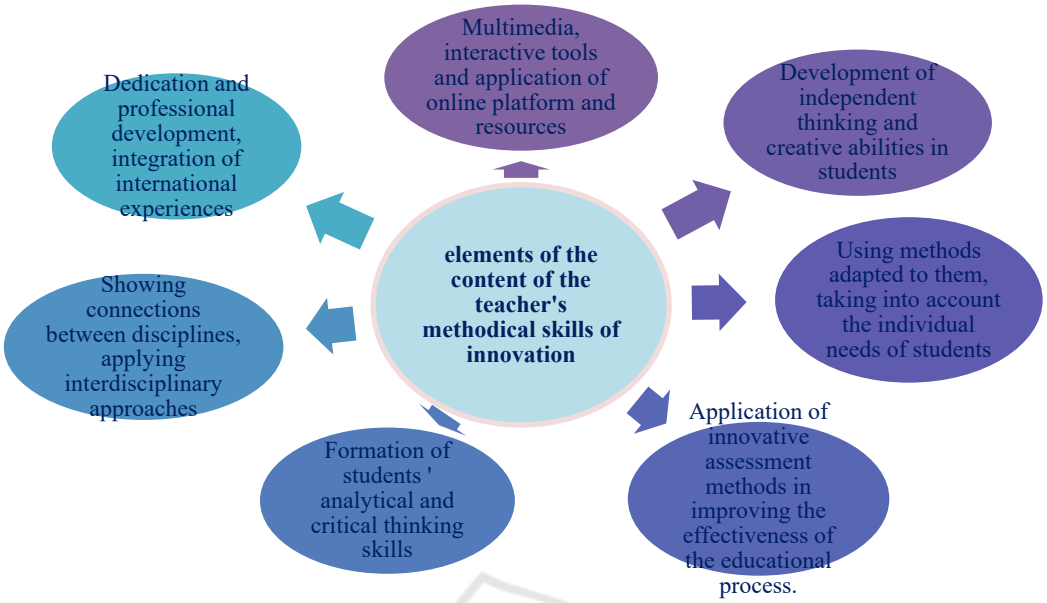

Figure 1: Elements of the content of the teacher's methodical skills of innovation.

the ability to apply effective methods and techniques in the teaching process, which includes the teacher's skills and skills in giving students knowledge, increasing their interest, and problem solving. Methodological skill also includes the development of teaching strategies adapted to students, taking into account their individual characteristics. In addition, methodological skill is also associated with the teacher's pedagogical experience, knowledge in the field of education and openness to innovative approaches.

Studies show that the content of the teacher's innovative methodological skills is based on several basic elements (see Figure 1).

These aspects are important for further strengthening the methodological skills of innovation and for the effective organization of the educational process. Based on our research, we found it necessary to cite recommendations for focusing on the following areas in the development of methodological skills of future teachers based on a cognitive approach: first of all, students learn to analyze cognitive processes, that is, to analyze cognitive processes in the process of acquiring knowledge and skills of students, such as attention, memory, thinking, reasoning; secondly, students know how to identify difficulties in reading activities, that is, to identify cognitive difficulties in students and learn ways to overcome them; thirdly, they are able to cognitively adapt educational materials, that is, adapt educational materials to the cognitive characteristics of students, learn to select and develop educational materials that will help develop their knowledge and skills; fourth, they must have the ability to choose teaching styles and strategies of the S. O. E., That is, learn to choose and apply teaching methods and strategies, taking into account the cognitive characteristics of students.

Only then does the teacher's skill, based on a cognitive approach, serve to develop students ' knowledge and skills, effectively organize the educational process, and form the ability to successfully apply various methods and methods of teaching.

7 CONCLUSION

The results of the study confirmed that the cognitive approach has a high efficiency in the development of methodological skills of future teachers. The educational process, organized on the basis of a cognitive approach, gave future teachers the opportunity not only to deeply master theoretical knowledge, but also to effectively apply them in practice. The results of the experimental group were significantly better than those of the control group, which showed the positive effects of cognitive approach-based learning in practice. Based on the results of the study, the cognitive approach has proven to be highly effective in developing the methodological skills of future teachers. The results

of the experimental group were significantly better than those of the control group, which confirmed the importance of the cognitive approach in the educational process. With this approach, Teachers acquired not only theoretical knowledge, but also practical application skills, which strengthened their professional training. International and national experiments have also confirmed that the cognitive approach is effective in education. In particular, according to Bliuc and colleagues (2007), the cognitive approach helps to strengthen students ' knowledge in the educational process and adapt them to new conditions. And national studies by khudayberganova and Yusupova (2023) have successfully demonstrated the use of this approach in the Uzbek educational system.

At the same time, the results found in the study showed the need for a broader future application of the cognitive approach. The role of the cognitive approach in the development of methodological skills of future teachers is large, which serves to improve quality in the educational system. Therefore, it will be worthwhile to introduce this approach more broadly not only to Uzbekistan, but also to the educational system of other countries.

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