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BO‘LAJAK O‘QITUVCHILARNI KASBIY PEDAGOGIK FAOLIYATGA TAYYORLASHDA MANTIQIY FIKRLASHNING AHAMIYATI

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Annotatsiya
Mazkur maqolada ta’lim jarayonida mantiqiy fikrlashni shakllantirishning pedagogik asoslari keltirilgan. Jumladan, bo’lajak o’qituvchilarni kasbiy pedagogik faoliyatga tayyorlashda mantiqiy fikrlashning ahamiyati nazariy manbalar asosida yoritib berilgan. Nazariy tahlil asosida, bo’lajak o’qituvchilarda mantiqiy topshiriqlardan foydalanishning pedagogik-psixologik jihatlari tahlil qilingan.

Kalit so’zlar: kasbiy pedagogik faoliyat, ta’lim jarayoni, mantiqiy fikrlash, pedagogik-psixologik omil, pedagogik texnologiyalar

Introduction

РОЛЬ ЛОГИЧЕСКОГО МЫШЛЕНИЯ В ПОДГОТОВКЕ БУДУЩИХ УЧИТЕЛЕЙ К ПРОФЕССИОНАЛЬНОЙ ПЕДАГОГИЧЕСКОЙ ДЕЯТЕЛЬНОСТИ

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Аннотация
В данной статье представлены педагогические основы формирования логического мышления в образовательном процессе. В частности, на основе теоретических источников подчеркивается значение логического мышления в подготовке будущих учителей к профессиональной педагогической деятельности. На основе теоретического анализа проанализированы педагогические и психологические аспекты использования логических заданий будущими учителями.

Ключевые слова: профессиональная педагогическая деятельность, образовательный процесс, логическое мышление, педагогико-психологический фактор, педагогические технологии.

THE ROLE OF LOGICAL THINKING IN THE PREPARATION OF FUTURE TEACHERS FOR PROFESSIONAL PEDAGOGICAL ACTIVITY

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Annotation
This article presents the pedagogical foundations of the formation of logical thinking in the educational process. In particular, the importance of logical thinking in the preparation of future teachers for professional pedagogical activity is highlighted based on theoretical sources. Based on the theoretical analysis, the pedagogical and psychological aspects of the use of logical assignments by future teachers were analyzed.

Keywords: professional pedagogical activity, educational process, logical thinking, pedagogical-psychological factor, pedagogical technologies.

In the world today, the widespread use of modern pedagogical and psychological approaches in diagnosing the logical thinking competencies and cognitive styles of future teachers is of great importance. It is also essential to further develop the ability of future educators to effectively organize the teaching process based on the laws of logic, as well as to successfully work with logical operations and justify results, quickly process new concepts, draw conclusions from data, and develop skills in constructing tasks based on the principles of induction and deduction. Moreover, the ability to identify logical errors in reasoning, apply creative approaches to problem-solving, understand the logical structure of a discipline, compare and classify systems of knowledge effectively are considered highly important competencies. Studying these issues through modern pedagogical technologies remains a relevant problem widely recognized by the global scientific community. At the same time, increasing attention is being paid to scientific research aimed at describing technologies for teaching logical thinking to future teachers, expert evaluation of the diagnostic potential of pedagogical developments, further improvement of technological models for forming logical thinking in future educators, and the development and systematization of pedagogical and psychological exercises and problem-solving tasks aimed at teaching logical thinking. These issues are being addressed at the level of important educational reforms worldwide.

Methodology

It is well known that reflecting environmental information is a characteristic feature of all living organisms; however, only humans are capable of higher forms of cognition and thinking. That is, a human being is not limited to simple reflection, but is a unique creature capable of logical, creative, and effective thinking, analyzing situations, making logical judgments in contradictory circumstances, understanding cause-and-effect relationships, and making rational decisions in problematic situations. These abilities are not innate; rather, they are formed through pedagogical processes such as learning, acquiring knowledge, and education. Logical thinking is a type of thinking whose essence lies in a process based on the laws of logic, including concepts, conclusions, comparing them, and analyzing problems through specific mental operations. For example, a child, by observing the surrounding environment, develops skills of perception, observation, and hypothesis formation. Or so it is impossible to understand the world without thinking. Therefore, issues related to thinking, logical reasoning, and their development are considered among the most interesting and important topics in the fields of pedagogy and psychology. To date, science has developed specific theoretical foundations related to logical thinking, most of which are pedagogical and psychological studies.

Among such research works, the scientific contributions of pedagogical scholars such as A.Ya. Komensky, I.A. Galkina, P.G. Lubochnikov, N.S. Omelchenko, A.Z. Zak, Yu.M. Kolyagin, L.M. Lihtarnikov, L.G. Peterson, D. Poya, G.I. Saransev, and L.M. Fridman are widely recognized. In psychology, the works of researchers such as L.S. Vygotsky, P.Ya. Galperin, V.V. Davydov, L.V. Zankov, N.B. Istomina, R.S. Nemov, L.Yu. Ogerchuk, N.F. Talizina, O.K. Tikhomirov, Yu.N. Kulyutkina, N.V. Kuzmina, and A.M. Matyushkina are especially acknowledged [1, pp. 59–60]. Therefore, in most studies, the problem of “logical thinking” is widely investigated within a system of approaches that are significant for both pedagogy and psychology.

As noted by the famous Russian psychologist S.L. Rubinstein, “through thinking, a person compares situations, distinguishes mutual relations, understands the connections between events, and thereby gains the ability to comprehend the essence of environmental phenomena more deeply” [2, p. 78]. Thus, the thinking process is continuous. It arises when a person encounters a problem or engages in a task that he or she has not previously faced. When a person does not have sufficient experience in solving a task, and previously used tools and methods are not suitable for solving the emerging problem, he or she realizes the need to search for and apply other methods that differ from previous ones. According to this approach, experience, acquired knowledge, and skills are among the conditions that ensure logical thinking. According to researcher J. Dewey, any thinking process that leads to a conclusion is logical. In the author’s view, a conclusion is not merely a process; in order to reach it, a concept is defined, its characteristics and features are confirmed through judgments, and finally a conclusion is drawn. Logical thinking is a form of thinking carried out consciously and in accordance with rules and laws through which concepts, judgments, and conclusions are formed [3, p. 85].

Table 1 Indicators of the Logical Thinking Level Questionnaire (based on Student's t-test)

Scales	Groups	M	Standard deviation (Sigma)	t-statistic
Observation skills	Experimental group	7	5.2	5.11*
Experience and skill mastery	Control group	5	4.5	4.25*
	Experimental group	6	5.8	
Ability to act with awareness	Control group	4	3.3	13.65
	Experimental group	5	4.2	
Indifference to own inner experiences	Control group	5	4.1	8.24
	Experimental group	4	3.6	
Relying on own experience	Control group	3	2.5	3.34**
	Experimental group	6	5.8	

***Note:** $p \leq 0.05$*

According to the research results, based on the questionnaire measuring the level of logical thinking in future teachers, differences were observed among students studying at Navoi and Kokand State Pedagogical Institutes and the Kattakurgan branch of Samarkand State University. On the first scale, observation skills showed differences between the experimental and control groups, with mean values M (7–5) and standard deviations (5.2–4.5). On the second scale, experience and skill mastery demonstrated values of M (6–4) and standard deviations (5.8–3.3). The ability to act with awareness showed similar mean results in both experimental and control groups M (5–5), with standard deviations (4.2–4.1). Logical thinking is a source of human development through which individuals understand their role in society and define the meaning of their life. On the scale of indifference to one's own inner experiences, respondents showed mean values M (4–3) and standard deviations (3.6–2.5), indicating moderately higher differences. Finally, on the scale of relying on one's own experience, respondents demonstrated M (6–3) with standard deviations (5.8–2.9), reflecting notable variation between groups.

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