

METHODOLOGY FOR DESIGNING TECHNOLOGIES FOR THE DEVELOPMENT OF STUDENTS' PROFESSIONAL COMPETENCIES IN THE PROCESS OF INFORMAL EDUCATION

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Abstract

This article examines the methodology for designing educational technologies aimed at developing students' professional competencies in the process of informal education. In contemporary pedagogical practice, informal education is increasingly recognized as an important environment for strengthening practical skills, professional motivation, independent learning, creativity, and social adaptability. The study emphasizes that professional competencies cannot be formed only through traditional classroom instruction, because students also acquire significant knowledge, experience, and behavioral models through extracurricular activities, professional communication, digital platforms, project work, volunteer initiatives, workshops, mentoring, and self-directed learning. The article analyzes the pedagogical conditions, methodological principles, and technological stages necessary for organizing informal education as a competency-oriented process. Special attention is paid to the design of flexible learning technologies that integrate theoretical knowledge with real professional situations, encourage reflection, and support the individual educational trajectory of each student. The research highlights the importance of diagnostic, motivational, organizational, practical, and evaluative components in designing such technologies. It is argued that the effectiveness of informal education depends on the purposeful selection of methods, active student participation, collaboration with social and professional institutions, and continuous monitoring of competency development. The article concludes that informal education, when methodologically structured, can become a powerful mechanism for preparing future specialists who are professionally competent, socially responsible, and capable of lifelong learning.

Keywords: Informal education, professional competencies, educational technology, competency-based approach, pedagogical design, student development, lifelong learning.

Introduction

INFORMAL TA'LIM JARAYONIDA TALABALAR KASBIY KOMPETENSIYALARINI RIVOJLANTIRISH TEXNOLOGIYALARINI LOYIHALASHTIRISH METODIKASI

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Annotatsiya

Ushbu maqolada informal ta'lim jarayonida talabalar kasbiy kompetensiyalarini rivojlantirishga qaratilgan ta'lim texnologiyalarini loyihalashtirish metodikasi tahlil qilinadi. Zamonaviy pedagogik amaliyotda informal ta'lim talabalarning amaliy ko'nikmalari, kasbiy motivatsiyasi, mustaqil o'rganish qobiliyati, ijodkorligi va ijtimoiy moslashuvchanligini rivojlantirishda muhim muhit sifatida qaralmoqda. Tadqiqotda kasbiy kompetensiyalar faqat an'anaviy auditoriya mashg'ulotlari orqali emas, balki darsdan tashqari faoliyat, kasbiy muloqot, raqamli platformalar, loyiha ishlari, volontyorlik tashabbuslari, seminar-treninglar, mentorlik va mustaqil ta'lim orqali ham shakllanishi asoslab beriladi. Maqolada informal ta'limni kompetensiyaviy yondashuv asosida tashkil etish uchun zarur bo'lgan pedagogik shart-sharoitlar, metodik tamoyillar va texnologik bosqichlar yoritiladi. Talabalarning individual ta'lim trayektoriyasini qo'llab-quvvatlaydigan, nazariy bilimlarni real kasbiy vaziyatlar bilan bog'laydigan, refleksiyanı kuchaytiradigan moslashuvchan ta'lim texnologiyalarini ishlab chiqishga alohida e'tibor qaratiladi. Tadqiqotda diagnostik, motivatsion, tashkiliy, amaliy va baholash komponentlarining ahamiyati ochib beriladi. Informal ta'limning samaradorligi metodlarning maqsadli tanlanishi, talabalarning faol ishtiroki, ijtimoiy va kasbiy institutlar bilan hamkorlik hamda kompetensiyalar rivojini uzluksiz monitoring qilishga bog'liq ekani ta'kidlanadi. Maqolada metodik jihatdan to'g'ri tashkil etilgan informal ta'lim bo'lajak mutaxassislarni kasbiy kompetent, ijtimoiy mas'uliyatli va uzluksiz o'qishga tayyor shaxs sifatida shakllantirishning muhim mexanizmi ekani xulosa qilinadi.

Kalit so‘zlar: informal ta’lim, kasbiy kompetensiyalar, ta’lim texnologiyasi, kompetensiyaviy yondashuv, pedagogik loyihalash, talaba rivoji, uzluksiz ta’lim.

Introduction

The development of students’ professional competencies is one of the central tasks of modern higher pedagogical education. In the contemporary educational environment, professional training is no longer limited to the transmission of theoretical knowledge within formal classroom conditions. Future specialists are expected not only to know the content of their academic field, but also to apply knowledge in real situations, communicate effectively, solve professional problems, use digital resources, cooperate with others, make independent decisions, and continuously improve their qualifications. For this reason, the process of competency formation requires a wider pedagogical space in which formal, non-formal, and informal learning opportunities complement one another.

Informal education occupies a special place in this process because it is closely connected with students’ daily experience, personal initiative, social interaction, professional interests, and independent learning activity. Unlike formal education, which is usually organized according to a fixed curriculum, informal education takes place through communication, observation, participation in extracurricular projects, online learning, mentoring, creative activity, volunteer work, professional communities, and practical problem-solving. Such learning is often flexible, situational, and personally meaningful for students. Therefore, it can become an effective mechanism for developing professional competencies when it is methodologically designed and pedagogically guided.

In pedagogical universities, the importance of informal education is especially high. Future teachers, educators, psychologists, methodologists, and other specialists need not only academic knowledge, but also communicative culture, organizational skills, reflective thinking, emotional stability, ethical responsibility, and readiness to work in diverse educational contexts. These qualities are formed gradually through real interaction with people, participation in educational events, analysis of practical cases, independent search for information, and involvement in socially significant activities. Informal education creates favorable conditions for such development because it allows students to connect theoretical learning with life experience and future professional practice.

At the same time, informal education does not always lead to systematic competency development by itself. If it is not purposefully organized, its results may remain accidental, fragmented, and difficult to assess. Therefore, there is a need to design special pedagogical technologies that transform informal learning opportunities into a

structured developmental process. Such technologies should include clear goals, diagnostic procedures, motivational tools, active learning methods, digital support, reflective tasks, cooperation mechanisms, and criteria for evaluating competency growth. The methodology for designing these technologies must be based on the principles of flexibility, individualization, practice orientation, continuity, and student activity.

In the context of Uzbekistan, the modernization of higher education, the expansion of digital learning, and the growing demand for competitive specialists increase the relevance of this issue. Pedagogical universities are expected to prepare graduates who are able to adapt to social changes, introduce innovative teaching methods, and participate actively in lifelong learning. Informal education can support these goals by enriching the educational process with practical, social, and creative experience.

Thus, the study of methodology for designing technologies aimed at developing students' professional competencies in the process of informal education is both theoretically and practically significant. It allows higher education institutions to use informal learning not as a spontaneous additional activity, but as a purposeful pedagogical resource for professional formation.

Methods

The methodological basis of this study is formed by the competency-based, activity-based, learner-centered, and technological approaches to higher pedagogical education. The competency-based approach makes it possible to define the expected educational result not only as a set of acquired knowledge, but also as the student's ability to apply this knowledge in professional, social, communicative, and problem-solving situations. The activity-based approach emphasizes that professional competencies are developed through active participation, practical tasks, independent search, collaboration, and reflection. The learner-centered approach allows the informal educational process to be adapted to students' interests, abilities, professional goals, and individual learning trajectories. The technological approach provides a structured model for designing, implementing, monitoring, and improving the pedagogical tools used in informal education.

The research was organized through theoretical analysis, pedagogical observation, comparative study, modeling, and generalization of educational experience. Theoretical analysis was used to examine scientific views on informal education, professional competence, pedagogical design, educational technologies, and lifelong learning. Through this method, the main conceptual foundations of the study were determined, including the relationship between informal learning and professional development, the pedagogical potential of extracurricular activities, and the role of independent learning

in the formation of professional qualities. Comparative study made it possible to distinguish the characteristics of formal, non-formal, and informal education and to identify the specific advantages of informal education in developing students' professional competencies.

Pedagogical observation was directed toward identifying how students acquire professional experience outside traditional classroom instruction. Special attention was paid to their participation in scientific circles, creative projects, volunteer activities, digital learning communities, professional discussions, mentoring sessions, student conferences, teaching practice-related activities, and independent educational initiatives. Observation helped to reveal that students demonstrate greater motivation and initiative when learning activities are connected with real professional situations and personal development needs.

Modeling was used to develop a methodological structure for designing technologies of professional competency development in informal education. This structure included several interrelated components: diagnostic, motivational, content-based, organizational, practical, reflective, and evaluative. The diagnostic component focused on identifying students' initial level of professional competencies, interests, learning needs, and difficulties. The motivational component was aimed at strengthening students' interest in professional growth through meaningful tasks, social relevance, personal choice, and visible practical results. The content-based component involved selecting educational materials, cases, digital resources, and professional situations suitable for informal learning. The organizational component determined the forms of activity, including workshops, project work, peer learning, mentoring, online discussions, educational events, and practical assignments. The reflective component encouraged students to analyze their own progress, difficulties, achievements, and future learning needs. The evaluative component made it possible to assess changes in professional competencies through observation, self-assessment, portfolios, practical tasks, and feedback.

The study also relied on the principle of methodological integration. This means that informal education was not considered separately from the general educational process, but as a complementary environment that strengthens and extends formal learning outcomes. The proposed methodology is based on the idea that informal education becomes effective when it is flexible in form, purposeful in content, practical in orientation, and measurable in results. Therefore, the design of technologies for professional competency development should combine freedom of student activity with pedagogical guidance, individual initiative with collective cooperation, and independent learning with systematic reflection.

Results

The results of the study show that informal education can significantly contribute to the development of students' professional competencies when it is organized on the basis of a clearly designed pedagogical technology. The analysis of informal learning activities demonstrated that students acquire professional qualities more effectively when they are involved in tasks that require independent decision-making, communication, cooperation, creativity, and practical application of theoretical knowledge. In such conditions, learning becomes not only a process of receiving information, but also a process of personal and professional self-development.

One of the main results identified in the study is that informal education strengthens students' motivation for professional growth. When students participate in projects, educational events, digital communities, volunteer initiatives, and professional discussions, they begin to understand the practical importance of their future profession more deeply. This increases their interest in independent learning and encourages them to search for additional information beyond the formal curriculum. In pedagogical universities, this is especially important because future teachers must develop the habit of continuous self-education and professional renewal.

The study also revealed that informal education creates favorable conditions for developing communicative and organizational competencies. Students who take part in extracurricular activities, peer learning, mentoring, and group projects learn to express their opinions, listen to others, defend their ideas, distribute responsibilities, solve conflicts, and work in a team. These competencies are directly related to the future professional activity of pedagogical university graduates, because teaching requires constant interaction with students, colleagues, parents, and the wider educational community.

Another important result concerns the development of reflective competence. Informal education allows students to compare their theoretical knowledge with real-life educational situations. Through reflection, self-assessment, portfolio preparation, discussion of practical cases, and feedback, students become more aware of their strengths, weaknesses, and professional development needs. This helps them build an individual trajectory of improvement and take responsibility for their own learning outcomes.

The research showed that the effectiveness of informal education depends on the presence of several pedagogical conditions. First, informal activities must be connected with the professional content of students' future work. Second, students should have the opportunity to choose tasks according to their interests and abilities. Third, teachers and mentors should provide methodological support without limiting students' independence. Fourth, the results of informal learning should be recorded and evaluated

through practical products, reflective notes, portfolios, observation, and feedback. These conditions make it possible to transform informal learning from a spontaneous experience into a purposeful process of competency development.

The proposed methodological model demonstrated the importance of diagnostic, motivational, organizational, practical, reflective, and evaluative components. Each component performs a specific function, but their effectiveness increases when they are used together. Diagnostics helps to identify students' needs, motivation activates participation, organization creates suitable learning conditions, practice develops real professional skills, reflection deepens personal understanding, and evaluation shows the level of competency growth.

Thus, the results confirm that technologies designed for informal education can improve the quality of professional training in pedagogical universities. They help students develop not only subject knowledge, but also practical readiness, social activity, communication culture, digital literacy, creativity, responsibility, and lifelong learning skills.

Discussion

The findings of the study indicate that informal education should be considered not as an additional or secondary form of learning, but as an important pedagogical environment for the development of students' professional competencies. In modern higher education, the professional formation of students depends on the integration of different learning spaces. Classroom instruction provides theoretical and methodological knowledge, while informal education gives students the opportunity to apply this knowledge in practical, social, digital, and creative contexts. Therefore, the main issue is not whether informal education is useful, but how it should be designed, guided, and evaluated in order to produce stable educational results.

The discussion of the obtained results shows that the methodological design of informal education must begin with a clear understanding of the competencies that should be developed. In pedagogical universities, these competencies include communicative, methodological, organizational, digital, reflective, creative, and socio-emotional components. A future teacher should be able to plan educational activities, communicate with learners, organize cooperation, use digital tools, analyze pedagogical situations, and make responsible decisions. Informal education supports these abilities because it places students in situations where they must act independently, interact with others, and solve real or near-real professional problems.

At the same time, informal education has a specific methodological complexity. Since it is flexible and often spontaneous by nature, it may lose its pedagogical value if it is not connected with educational goals. For this reason, the teacher's role changes from

direct transmitter of knowledge to designer, consultant, mentor, and facilitator. The teacher does not control every action of the student, but creates conditions for meaningful activity, provides resources, offers feedback, encourages reflection, and helps students connect their informal experience with professional development. This approach corresponds to the modern understanding of student-centered education, where the learner becomes an active subject of educational activity.

The results also show that informal education is closely related to lifelong learning. Students who participate in informal learning activities gradually develop the habit of searching for knowledge independently, using digital resources, communicating in professional communities, and evaluating their own progress. These qualities are particularly important in the context of rapid social and technological change. A specialist who relies only on knowledge received during formal education may face difficulties in adapting to new professional requirements. In contrast, a student who has developed self-directed learning skills through informal education is more prepared for continuous professional renewal.

Another significant issue is assessment. Traditional forms of assessment are not always suitable for informal education, because competency development is often reflected in behavior, communication, practical products, initiative, and reflection. Therefore, evaluation should include portfolios, self-assessment, peer feedback, mentor feedback, observation, project results, and reflective diaries. Such tools allow the teacher to see not only the final result, but also the process of professional growth. However, assessment should not destroy the flexible and creative nature of informal education. It should support students' development rather than turn informal learning into another rigid formal requirement.

In the conditions of Uzbekistan's pedagogical higher education, the use of informal education technologies can help strengthen the practical orientation of teacher training. Student clubs, scientific circles, professional workshops, digital platforms, volunteer projects, educational events, and mentoring systems can become effective mechanisms for forming professional competencies. However, their effectiveness depends on systematic methodological support, institutional cooperation, teacher readiness, and students' active participation. Thus, informal education becomes most productive when it is integrated with the general educational strategy of the university and directed toward clear professional outcomes.

Conclusion

The development of students' professional competencies in the process of informal education is an important direction for improving the quality of higher pedagogical education. The analysis carried out in this article shows that informal education has

significant pedagogical potential because it connects professional preparation with students' personal experience, independent activity, communication, creativity, and practical participation. In contrast to learning that is limited only to formal classroom instruction, informal education gives students the opportunity to acquire knowledge and skills in real social, professional, cultural, and digital environments. This makes the learning process more flexible, personally meaningful, and closely related to future professional activity.

The study has shown that professional competencies are formed more effectively when students are involved in active and practice-oriented forms of learning. Participation in projects, workshops, mentoring, volunteer activities, scientific circles, digital communities, peer cooperation, and professional discussions helps students develop not only theoretical understanding, but also communicative, organizational, reflective, methodological, digital, and creative abilities. These competencies are especially important for future specialists of pedagogical universities, because their professional activity requires constant interaction with learners, colleagues, parents, and society. Therefore, informal education should be regarded as a valuable pedagogical resource for strengthening the practical orientation of teacher training.

At the same time, the effectiveness of informal education depends on its methodological organization. If informal learning remains completely spontaneous and disconnected from educational goals, its results may be unstable and difficult to evaluate. For this reason, there is a need to design special educational technologies that give informal education a purposeful, systematic, and competency-oriented character. Such technologies should include diagnostic, motivational, organizational, practical, reflective, and evaluative components. Diagnostics helps to determine students' initial level and learning needs. Motivation encourages active participation. Organization creates favorable conditions for informal activity. Practice allows students to apply knowledge in meaningful situations. Reflection helps them understand their progress and difficulties. Evaluation makes it possible to determine the level of competency development.

The methodology for designing technologies in informal education should be based on flexibility, individualization, continuity, practice orientation, cooperation, and reflection. These principles allow students to choose personally significant forms of activity while remaining within a pedagogically guided developmental process. In this regard, the teacher's role also changes. The teacher becomes not only a source of knowledge, but also a designer of learning environments, mentor, consultant, facilitator, and organizer of reflective dialogue. Such a role is necessary for transforming students' informal experience into professional growth.

In the context of higher pedagogical education, informal education can contribute to the formation of competitive, socially responsible, creative, and self-developing specialists. It supports lifelong learning, strengthens professional motivation, and prepares students for changing educational conditions. The results of the study confirm that the purposeful design of technologies for informal education can improve the quality of professional training and expand the developmental possibilities of the university environment. Thus, informal education should be systematically integrated into the general strategy of professional competency formation, while preserving its openness, flexibility, and student-centered character.

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