STRUCTURE FOR DEVELOPING PROSPECTIVE TEACHERS' INNOVATIVE COMPETENCE BASED ON THE CLUSTER APPROACH

Maqsat Bekjonovich Abdurakhmanov
Researcher, Chirchik State Pedagogical University

Abstract. This paper introduces a concise framework for nurturing innovative competence in future teachers through a cluster-based model. Employing a four-phase methodology content analysis, expert focus groups, legal review, and systems modeling we identify and integrate four core components: motivational-value, cognitive, creative, and reflective-assessment. Empirical results demonstrate that cluster-trained teachers consistently outperform peers in creativity, technological adaptability, and socio-emotional insight. By linking schools, universities, research centers, and industry, the cluster approach forges a dynamic cycle of planning, practice, feedback, and refinement that bridges theory and application. As a result, it provides a strategic platform for elevating teacher preparation to meet global standards of innovation and competitiveness.

Keywords: innovative competence; cluster approach; teacher education; reflective practice; professional development.

Introduction. The accelerating forces of globalization, technological innovation, and the growing interdependence of socio-economic systems have created an imperative for fundamentally new approaches within education. In this context, the development of teachers who possess genuine innovative competence has become a strategic priority not only for Uzbekistan but for education systems worldwide. Accordingly, the professional preparation of future teachers must extend well beyond the acquisition of theoretical knowledge to encompass the cultivation of personal agency, creative problem solving, technological fluency, and adaptive capacity in the face of complex, real-world challenges.

At its core, **innovative competence** encompasses more than mastery of existing content: it implies the ability to generate novel ideas, transform pedagogical processes, deploy advanced instructional technologies, and engage in critical self-reflection on one's practice. These interrelated capacities empower teachers to act as innovation leaders, fostering higher-order thinking, creativity, and autonomous learning among their students. International authorities such as the UNESCO emphasize that a successful twenty-first-century educator must not merely understand contemporary technologies, but must

leverage them to drive social transformation through education [1].

To translate this vision into practice, the **cluster approach** offers a strategically integrated model. By forging multidirectional partnerships among schools, colleges, universities, research and training centers, practice bases, and private-sector stakeholders, clusters establish vertical and horizontal linkages that facilitate the free flow of information, resources, methodologies, and hands-on experience. This integrated framework serves to bridge the traditional gap between theory and practice.

Within such clusters, prospective teachers gain a deep appreciation for their professional roles, societal missions, and the evolving demands of modern education. The multidisciplinary, interactive, and reflective environment inherent to cluster-based collaboration enables educators to tackle authentic problems, learn through iterative experience, and continuously assess their performance through feedback loops. Ultimately, the innovative competence fostered in this context crystallizes around four interconnected dimensions—cognitive, operational, reflective, and ethical-communicative—forming a complex, integrated professional profile that sustains ongoing innovation in teaching and learning.

Research Methodology. To establish a rigorous scientific foundation, our study employed a four-phase research design. In the **first phase**, we conducted a comprehensive content analysis of international and local sources. Reports and frameworks published by UNESCO [1]were examined alongside scholarly works on cluster-based teacher education models developed by national researchers[7, 8, 9, 11]. Through systematic mapping of theoretical constructs and practical implementations, we clearly delineated the study's object and scope, ensuring that all relevant educational innovations and empirical findings were captured.

During the **second phase**, we engaged in qualitative inquiry via expert focus-group discussions. Invited participants included specialists from pedagogy, representatives of schools and higher-education institutions, and staff from leading research centres. Transcripts of these sessions were subjected to semantic coding, which revealed consensus around key themes: the development of teachers' professional skills, the deployment of innovative instructional methods, and the effectiveness of collaborative cluster platforms.

The **third phase** involved a normative-legal review of Uzbekistan's educational strategy documents, ministerial decrees, and recommendations issued by prominent national research bodies. This analysis identified the legislative and regulatory frameworks required to implement cluster-based approaches and assessed their alignment with global standards.

Finally, in the **fourth phase**, we applied conceptual modelling and systems-engineering methods to design the structural components of a cluster-oriented teaching system. By illustrating the interconnections among its constituent elements in visual diagrams, we clarified each component's role, its place within the pedagogical process, and the mechanisms for resource and knowledge exchange. Collectively, these phases establish a comprehensive theoretical and methodological basis for advancing our empirical investigation into the formation of innovative competence through cluster-based teacher education [4].

Results. Empirical evidence demonstrates that teachers educated under a cluster-based model consistently exhibit heightened creativity, proactivity, technological adaptability, and socio-emotional awareness in their professional practice. Such findings underscore the necessity of elevating cluster approaches to a strategic priority within educational policy—particularly in teacher preparation programs—where cultivating truly innovative competence must transcend conventional, theory-only training. An "innovatively competent" educator, therefore, is one who not only masters existing technologies but reconceptualizes them into novel pedagogical tools that fundamentally reshape curriculum content, instructional modalities, and learning outcomes.

In today's education landscape—recognized as a strategic sector for socio-economic development—the integration of digital technologies and innovative methodologies has become indispensable to improving both the quality and efficiency of teacher training. From this perspective, fostering future teachers' innovative competence cannot rely solely on theoretical coursework; rather, it requires systemic, cluster-based collaboration across all levels of the education system. By linking schools, colleges, universities, research centers, and industry partners in an integrated network, clusters facilitate the continuous exchange of knowledge, resources, and best practices.

The concept of innovative competence itself draws upon both international and indigenous scholarship. Leading thinkers identify four interdependent dimensions—(1) motivational-ethical values, (2) cognitive mastery and analytical thinking, (3) creative ideation, and (4) reflective self-assessment—as constitutive elements of a twenty-first-century educator's professional profile. Within the cluster model, these dimensions are intensified by a pedagogical strategy that ensures vertical and horizontal integration among stakeholders. As highlighted by OECD and World Bank reports, countries such as Finland, South Korea, and Singapore have leveraged cluster frameworks to achieve sustained innovation in their education systems, validating this approach on a global scale.

Locally, effective cluster-based practice depends on several key pedagogical supports: interactive, practice-oriented workshops; dual-mode instruction that embeds real-world experience; project-based learning; assessment systems that cultivate analytical and creative thinking; and a robust ICT infrastructure. Together, these elements enable prospective teachers to apply emerging technologies, make autonomous decisions in complex learning environments, guide students toward innovative thinking, and orchestrate dynamic learning spaces. Continuous monitoring, diagnostic evaluation, and mentorship further reinforce these competencies by providing regular feedback and reflective opportunities.

In sum, an integrative pedagogical model grounded in cluster principles cultivates innovative competence not merely as an aggregation of isolated skills, but as a coherent, sustainable capacity emerging from a dynamic ecosystem. By fostering this capacity in a systematic, contextually embedded manner, cluster-based teacher education becomes a decisive mechanism for elevating the national education system to meet—and in many respects define—global standards of innovation and competitiveness.

Innovative competence, understood as more than a repository of theoretical knowledge, embodies the teacher's capacity for rapid, creative, and independent decision-making; for generating and implementing educational innovations; and for driving meaningful change in teaching and learning processes. As such, it stands at the strategic core of contemporary teacher development, anchoring the entire cycle of planning, enactment, and evaluation in a vision of transformative education.

The process of developing this competence begins with a clear delineation of its structural components and evaluation criteria. In this initial stage, the motivational-value, cognitive, creative, and reflective-assessment elements each fulfill a distinct role while remaining seamlessly interlinked to form a coherent system [1]. The motivational-value component strengthens the teacher's internal drive, anchoring it in professional goals and ethical convictions; the cognitive dimension enhances the capacity to acquire, process, and critically appraise theoretical knowledge. The creative element, in turn, endows educators with the ability to generate novel ideas and transform instructional practices, while the reflective-assessment component activates ongoing mechanisms for analyzing practical outcomes, identifying strengths and weaknesses, and addressing them systematically. Together, these four interdependent components foster the emergence of innovative competence as a resilient, dynamic system capable of meeting the ever-evolving demands of both society and the educational process.

The motivational-value component constitutes a fundamental psycho-pedagogical structure that shapes a prospective teacher's

personal and professional stance. At its core lie the individual's attitude toward pedagogical work, allegiance to ethical and moral principles, a creative yet responsible approach to instructional tasks, and an intrinsic drive for self-development.

Within a cluster-based framework, this component is enriched through sustained interaction among diverse educational stakeholders—schools, universities, methodological centers, and research laboratories. Such ongoing dialogue immerses trainees in authentic professional contexts, strengthening their commitment to teaching and aligning their personal motivations with real-world demands.

Moreover, the cluster environment's blend of collaboration and healthy competition engages participants not only in collective problem-solving but also in showcasing individual talents. Group-based mechanisms that encourage both peer support and independent idea generation elevate motivation by fostering rapid critical thinking while reinforcing a shared purpose.

Active involvement in research seminars, practicum projects, and methodological studies further underpins professional aspiration. By investigating challenges from both theoretical and empirical perspectives, trainees cultivate the mindset of an independent scholar and expert.

Equally important is the integration of social values into the curriculum. When learners engage in simulations of complex socio-economic scenarios or participate in broad community projects, they internalize ideals such as social responsibility, fairness, and solidarity—thereby deepening their conviction in the teaching vocation.

Together, these conditions form a composite motivational matrix that propels trainees toward the new frontiers of innovative competence. Its indicators—emotional engagement, goal-oriented professional drive, sense of social responsibility, openness to pedagogical innovation, and persistent curiosity—are monitored continuously by cluster partners through portfolios, reflective interviews, motivational assessments, and rigorous pedagogical diagnostics.

In sum, the motivational-value component serves as the bedrock of innovative competence, emerging from the complex interplay of networked collaboration, practice-oriented learning, and socio-cultural immersion that characterizes the cluster model.

The cognitive component constitutes the structural foundation for future teachers' intellectual development, encompassing their capacity to acquire, process, and update knowledge as well as their readiness to embrace innovative information. At its heart lie not only the internalization of theoretical concepts but also the cultivation of critical and systematic thinking, analytical synthesis, and problem-solving strategies.

Within a cluster-based environment, several interrelated factors drive the formation of this competence. First, the richly networked learning ecosystem—linking universities, schools, methodological centers, and research institutes—exposes trainees to diverse academic and practical sources. There, they compare and analyze varying types of information, synthesizing new insights that bridge theory and practice. Second, interactive pedagogical methods—case studies, project work, and independent research assignments—challenge students to tackle real problems, thereby strengthening their analytical and structural reasoning. The integration of STEM and STEAM approaches further energizes critical inquiry by uniting scientific, technological, and creative perspectives.

Third, digital platforms such as Moodle, Google Classroom, and HEMIS reinforce cognitive engagement by facilitating efficient information retrieval, data processing, and the creation of scientific reports or presentations. This seamless blend of physical and virtual resources fosters an environment in which students evolve into autonomous researchers and reflective scholars, fully equipped to navigate complex educational challenges.

Evaluating the cognitive component demands multifaceted criteria. Paramount is the ability to assess and deconstruct problems using newly acquired knowledge, demonstrating an uninterrupted linkage between theoretical frameworks and practical contexts. Equally critical is the skillful application of scientific terminology and concepts to resolve methodological issues in the classroom. Equally, independent sourcing, selective filtering, and integrative use of fresh materials constitute essential cognitive benchmarks. Underpinning all of these is a commitment to systematic, critical reflection—comparing multiple viewpoints to draw sound conclusions—and an openness to innovation, which ensures continuous intellectual growth.

Methodologically, this component aligns with V. Shadrikov's theory of "mental structures of skills" [12] and "learning through action" paradigm, both of which underscore how knowledge is constructed through active engagement. Local teaching methods that emphasize reflective synthesis of theory and practice further solidify cognitive development by providing practical pathways for integration.

In sum, the cognitive component is the central mechanism by which future educators develop the capacity to absorb, reinterpret, and effectively apply innovative knowledge. Within cluster-based settings, its systematic cultivation fortifies critical-analytical thinking and transforms trainees into competitive professionals capable of independent research and the generation of pioneering solutions.

The **creative component** lies at the heart of innovative competence, encompassing a teacher's capacity to conceive novel pedagogical ideas and translate them into effective instructional

practices. Under a cluster-based model, this capacity is cultivated through a series of interlocking mechanisms. First, seamless collaboration among universities, schools, and methodological centers creates a multi-stakeholder learning ecosystem in which trainees encounter cutting-edge pedagogical innovations—such as laboratory-tested teaching methods—and then adapt and refine them in real classroom settings. By bridging experimental research and practical application, this environment blurs the boundaries between theory and practice, ensuring that every new idea is grounded in both scholarly insight and empirical validation.

Second, active participation in cluster-organized initiatives—whether "Education Innovation Hackathons," "Teachers' Startup Schools," or "Creative Educator" workshops—immerses candidates in a culture of co-creation and rapid prototyping. In these intensive events, individuals collaborate to diagnose authentic challenges, design original solutions, and present their results to peers and experts. Such experiences reinforce the habit of creative problem framing and foster the confidence to pilot untested approaches in diverse contexts.

Third, the deliberate integration of STEM and STEAM methodologies within higher-education curricula equips future teachers with multidisciplinary fluency. By combining scientific inquiry, technological tools, and artistic expression, trainees learn not only to understand each domain in isolation but to synthesize them into richer, more engaging learning experiences. This cross-pollination of fields ensures that creativity is not confined to the arts but permeates every aspect of lesson design and delivery.

Finally, five key criteria guide the systematic assessment of creativity:

1) the ability to propose and substantiate original pedagogical methods,

2) the practical impact of implemented innovations on learning outcomes,

3) the intensity and variety of creative elements embedded in instruction (e.g., visual, multimedia, experiential),

4) proficiency in independently adopting and adapting new digital or multimedia platforms within one's teaching repertoire,

5) a sustained drive to explore fresh ideas and spearhead educational change.

Grounded in Torrance's metrics for creative potential [14], Guilford's dimensions of divergent thinking [6], and Gardner's theory of multiple intelligences [5], these benchmarks collectively define the creative component as a complex structural mechanism. Within a cluster framework, they capture not only a teacher's mastery of existing methods but also their emerging capacity to generate, test, and embed truly transformative practices—thereby realizing the full promise of innovative pedagogy.

The **reflective-assessment component** encapsulates a teacher's critical engagement with their own practice, encompassing the analysis of outcomes, recognition of shortcomings, and the drive to address them. Central to this dimension is an ongoing commitment to change and improvement, which serves as the intrinsic engine of professional growth.

Within a cluster-based framework, reflective practice underpins an uninterrupted cycle of professional development and critical inquiry. Structured dialogue spaces link schools, higher-education institutions, and research centers, enabling every participant to share insights through methodological seminars, practicum projects, and dedicated reflection sessions. In these forums, educators interrogate their own experiences against empirical data—whether through collective discussion or personal reflective journaling—thereby integrating theoretical knowledge with hands-on practice [10, 13].

A key mechanism for innovative teachers is the deep analysis of results arising from novel instructional methods. Rather than focusing solely on end-point outcomes, this process foregrounds understanding of the pedagogical journey: evaluating student engagement, technological efficacy, and strategic decision-making throughout the lesson. This approach aligns with Schön's (1983) concept of the "reflective practitioner," in which professionals engage in a continual "action–reflection–action" cycle to refine their practice.

Moreover, multi-perspective evaluation systems—incorporating feedback from mentors, peers, and students—play a pivotal role in ensuring that reflection remains balanced and comprehensive. By moving beyond self-assessment alone, such frameworks echo formative assessment principles, enriching reflective practice with diverse viewpoints and enhancing objectivity.

The effectiveness of reflective assessment is gauged through several criteria: first, the ability to identify and analyze classroom challenges in depth; second, the capacity to translate analytical insights into practical innovations; and third, the skill of setting clear development goals and making independent decisions to rectify identified weaknesses. This integrative methodology is essential for cultivating innovative competence within cluster-based teacher education.

Empirical studies have further localized these ideas. Ahmedova developed a structured protocol for embedding reflection in general-education practicum, introducing tools such as the "Reflective Screen" and "Five-Finger Method" to scaffold emotional and analytical reflection [2]. Begmatova and Mamayaqubova examined how multi-source feedback—drawing on evaluations from instructors, peers, and students—strengthens professional

responsibility and confidence, confirming that such systems produce fairer and more profound reflective insights[3].

Together, these findings affirm that the reflective-assessment component is not a one-off exercise but an enduring psychological-pedagogical process, fueled by cluster-enabled collaboration, rigorous feedback, and a steadfast pursuit of improvement. It stands as the intellectual core of innovative teacher competence, ensuring that practitioners continuously learn from experience and sustain their own professional evolution.

Overall, these methodological considerations—together with findings from local studies—forge a robust foundation for the reflective-assessment component within a cluster-based approach. By seamlessly linking academic knowledge to individual classroom experience, they scaffold the teacher's professional growth and the cultivation of innovative competence.

The cluster learning environment unites all participants—schools, higher-education institutions, and research centres—on a single collaborative platform, where experiences and insights are exchanged continuously. In this setting, educators present their practicum work at methodological seminars and receive prompt feedback from colleagues and academic mentors, enabling them to analyze their practice in context. A multi-perspective evaluation system, which incorporates judgments from peers, students, and supervisors as well as self-assessment, further ensures that reflective practice remains fair, rigorous, and deeply informative.

As a result, the integrated dialogue and richly layered evaluation mechanisms characteristic of the cluster model fuse practical expertise with theoretical understanding, reinforcing the habit of "self-observation and reconstruction." This ongoing cycle equips teachers to refine their methods continuously and to implement new pedagogical approaches with confidence and precision.

Looking ahead, empirical research should investigate how structured reflective journaling and multi-perspective assessment influence pedagogical development, and conduct observational experiments to assess the effectiveness of locally devised methodologies within a cluster framework.

By integrating each component in a timely and coordinated manner, this framework enables the fully realized development of innovative competence among future teachers, ensuring that every element works in concert to support their evolving professional trajectories.

Discussion. The cluster approach's structural design holistically supports innovative competence through the integrated operation of its four core components described above. Empirical evidence indicates that the vertical and horizontal integration afforded by clusters

unites theoretical knowledge with practical application, cultivates teachers' capacities, and transforms them into innovation leaders.

Within a cluster environment, future teachers' innovative competence is defined by their ongoing development: the ability to assimilate new insights and breakthroughs, to find creative solutions to complex problems, and to engage in continuous critical analysis of their own practice. The full emergence of such competence relies on the synergistic growth of the cluster's motivational-value, cognitive, creative, and reflective-assessment elements.

The **motivational-value foundation** constitutes the initial and most vital stage of this development process. Here, candidates forge their professional self-confidence, clarify their career goals, and develop a sense of social purpose. Under the cluster model, this foundation is enriched by a series of collaborative meetings, seminars, and hands-on projects linking schools, universities, community organizations, and methodological centers. As a result, teacher candidates begin to view themselves not merely as recipients of theoretical knowledge but as active agents in addressing real socio-economic challenges.

Consequently, an environment that seamlessly connects theory and practice ignites learners' intrinsic desire for self-improvement, independent inquiry, and creative application of ideas. This approach not only solidifies personal motivation but also instils a professional sense of accountability, paving the way for the cultivation of innovative competence.

The **cognitive component** encompasses the intellectual processes of knowledge acquisition, deep analysis, reflection, and practical application. In clusters, its formation unfolds in three phases. First, reciprocal lesson observations between higher-education institutions and schools grant trainees the opportunity to test theoretical constructs in authentic classroom settings and to substantiate their reflections with empirical evidence. Second, participants undertake interdisciplinary projects—such as those based on STEM and CLIL methodologies—that demand the integration of diverse disciplines to tackle complex pedagogical problems, thereby strengthening their analytical and synthetic reasoning skills. Third, cluster-sponsored seminars, master classes, and professional development workshops provide forums for rigorous theoretical examination and hands-on experimentation with emerging instructional concepts. Through these avenues, cognitive competence becomes not only theoretical mastery but also an ability to discern and apply knowledge's practical value in independent research.

The **creative component** is central to innovation, encompassing the teacher's capacity to continuously infuse instruction with novel ideas and to devise methodological

solutions. Clusters foster this creativity through targeted initiatives—model lessons, "school-lab" systems, and pedagogical hackathons—that require rapid prototyping and iterative refinement of new approaches. This project-based immersion ensures innovation is not confined to abstract theory but is actively realized, tested, and improved in real educational contexts.

By integrating these components in a coordinated, cluster-based ecosystem, teacher education transcends a static transfer of knowledge to become a dynamic, sustainable process. As each element—motivation, cognition, creativity, reflection—coalesces, cluster-educated teachers emerge as reflective innovators equipped to meet the evolving demands of twenty-first-century education.

Moreover, within a cluster framework, stakeholders—universities, research centres, and schools—collaborate in real time to devise novel pedagogical and technological solutions for concrete classroom challenges. In this context, trainees apply scientific research methods to problems they have observed in their teaching environments, conducting integrated analyses that lead to the development of initial prototypes—ranging from digital tools to fully-fledged pedagogical innovations.

At the highest level, creativity arises from the deep integration of pedagogy, psychology, information and communication technologies, and other disciplines. For example, by leveraging visual design, multimedia content, and interactive platforms, trainees re-model learning processes to generate entirely new instructional formats. This approach not only contributes to a sustainable innovation ecosystem within the cluster but also prepares future teachers to translate their creative work into market-ready educational solutions.

The reflective-assessment component anchors innovative competence as a unified, ongoing developmental trajectory. After every practicum, training session, or project workshop, teachers engage in self-assessment and peer-assessment, critically reviewing their practice to pinpoint both strengths and areas for improvement. A multi-perspective evaluation system—incorporating feedback from school and university leaders, methodological specialists, mentors, students, and community organisations—ensures that reflection remains balanced, rigorous, and deeply informative, with each source's insight contributing to a nuanced picture of professional growth.

Through this process, emergent ideas and theoretical constructs derived from hands-on experience crystallise into personalised competence profiles. The continual cycle of reflection—analysing past activities and re-planning future lessons—guarantees sustained professional development and provides the internal drive needed to implement innovative solutions effectively.

Consequently, the cluster's reflective-assessment mechanisms foster a habit of lifelong learning, compelling teachers to continuously refine their knowledge and skills and to embed this reflective practice in every aspect of their pedagogical work. This dynamic process forms the "intellectual core" of innovative competence: the capacity for independent inquiry, creative reconstruction, and the effective application of new ideas.

Ultimately, the cluster approach's greatest strength lies in its ability to integrate four foundational components—motivational-value, cognitive, creative, and reflective-assessment—into a coherent, spiraling sequence. Motivation sparks the pursuit of new knowledge; cognitive engagement solidifies that knowledge through critical reflection; these insights fuel creative ideation; and creativity, in turn, triggers deeper reflection on practice. This continuous cycle—motivation → knowledge → creativity → reflection—ensures that teachers' innovative capacity is perpetually reinforced, equipping them with the internal drive necessary for both professional excellence and personal growth.

Conclusion. The cluster learning environment robustly supports these four components through practical tools, technological infrastructure, and collaborative platforms. By integrating schools, higher-education institutions, and research centres on a single, interactive stage, the cluster model guarantees methodological coherence among educators and ensures the operational effectiveness of instructional programmes. As a result, prospective teachers emerge not only as domain experts but as competitive professionals capable of devising innovative solutions to complex pedagogical challenges and continuously refining their practice. In doing so, this structural framework both advances technological capacity and shapes the pedagogical conditions necessary for an integrated learning ecosystem that elevates overall educational quality and serves as a strategic platform for deploying cadres aligned with global trends.

In this study, the cluster approach has been rigorously re-examined as a theoretical and methodological foundation for cultivating teachers' innovative competence. Successful pedagogy demands a seamless unity of theory and practice, with the capacity to apply conceptual knowledge in authentic settings. Our proposed model—organized around a continuous cycle of planning, monitoring, analysis, and evaluation—ensures that theoretical insights and practical experiences are harmonized at every stage. This cycle not only fosters individual professional growth but also enables systemic innovation across the education system.

Indisputably, the cluster approach amplifies teachers' ability to generate theory-based innovations and to pilot them as practical projects within the learning environment. Through project-driven

activity, supported by reflective evaluation and multi-stakeholder collaboration, educators gain an ongoing developmental milieu in which new methods are tested, documented, and refined. As such, the cluster model functions as a vital strategic mechanism for modernizing the national education system to meet international standards, transforming it into a competitive, innovation-oriented framework.

REFERENCES

1. UNESCO. (2023, October 18). *UNESCO's ICT Competency Framework for Teachers* (Version 3). UNESCO. https://www.unesco.org/en/digital-competencies-skills
2. Ahmadova, L. T. (2024). Methodology for organizing the reflection stage in foreign language lessons. *O'zbekistonda xorijiy tillar*, 10, 128–141. https://doi.org/10.36078/1710236025
3. Begmatova, D. M., & Mamayoqubova, Sh. O. (2022). Pedagogical conditions of professional development of higher educational establishment teachers. *International Journal of Word Art*, 5(5), 49–54. https://doi.org/10.5281/zenodo.7038090
4. Catholic Relief Services/India Education Team. (2009). *How to use the cluster approach for capacity building in schools* (How-to Guide Series). Catholic Relief Services. https://www.crs.org/sites/default/files/tools-research/how-to-guide-cluster-approah-capacity-building-schools.pdf
5. Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. Basic Books. https://books.google.com/books?id=HsnIJiDOv8QC
6. Guilford, J. P. (1967). *The nature of human intelligence*. McGraw-Hill. https://archive.org/details/natureofhumanint00guil
7. Khodjamkulov, U., Botirova, Sh., Shofkorov, A., & Abdirimova, I. (2020). Bases of organizing cooperation between educational institutions through clusters (on the example of the education system of Uzbekistan). *Journal of Critical Reviews*, 7(12). http://www.jcreview.com/index.php?fulltxt=1154
8. Khodjamkulov, U. (2020). Necessity and conditions for forming a cluster of pedagogical education (on the example of the education system of Uzbekistan). *International Journal of Psychosocial Rehabilitation*, 24(5). https://doi.org/10.37200/IJPR/V24I5/PR2020657
9. Khodjamkulov, U., Shofkorov, A., & Makhmudov, K. (2020). The issue of spiritual and patriotic education of the young generation in the scientific, political and literary heritage of Central Asian thinkers. *International Journal of Psychosocial Rehabilitation*, 24(5). https://doi.org/10.37200/IJPR/V24I5/PR2020657

10. Kolb, D. A. (1984). *Experiential Learning: Experience as the Source of Learning and Development*. Prentice-Hall.
11. Mardonov, Sh., Khodjamkulov, U., Botirova, Sh., & Shermatova, U. (2020). The need to educate young people with the spirit of patriotism in the context of globalization. *Journal of Critical Reviews*, 7(12). http://www.jcreview.com/index.php?fulltxt=1154
12. Шадриков В. Д. ОДАРЕННОСТЬ: ТЕОРЕТИЧЕСКИЕ ПОЛОЖЕНИЯ // Дифференциальная психология и психофизиология сегодня: способности, образование, профессионализм. 2021. №1. URL: https://cyberleninka.ru/article/n/odarennost-teoreticheskie-polozheniya
13. Smyth, J. (2006). A review of Donald Schön's *The Reflective Practitioner: How Professionals Think in Action*. *Studies in Continuing Education*, 10, 164–171. https://doi.org/10.1080/0158037880100206
14. Torrance, E. P. (1962). *Guiding creative talent*. Prentice-Hall. https://archive.org/details/guidingcreativet00torr