

ORGANIZATIONAL AND METHODOLOGICAL MECHANISMS FOR DEVELOPING INTELLECTUAL COMPETENCE IN THE PROFESSIONAL TRAINING OF FUTURE PRESCHOOL EDUCATION TEACHERS

Yusupova Xilola Karimjonovna
Independent Researcher at the Institute for
Vocational Education Development

Abstract

The contemporary landscape of preschool education is characterized by an accelerating demand for educators capable of fostering complex cognitive development, emotional regulation, and creative problem-solving in children from the earliest stages of human formation. This article addresses the persistent disconnect between the academic preparation of future preschool teachers and the multidimensional intellectual demands of contemporary early-childhood pedagogy, and proposes the development of an Integrated Intellectual Competence Framework as a strategic mechanism for the comprehensive professional formation of educators.

Keywords: Preschool education management, intellectual competence, reflective practice model, competency-based formation.

Introduction

In the context of a rapidly evolving knowledge economy and the strategic priorities articulated in the Presidential Decree PF-158 of 16 October 2024 on the further improvement of the vocational training system, the management of teacher-preparation institutions in Uzbekistan faces a dual challenge: ensuring the cognitive readiness of future preschool educators while simultaneously aligning their pedagogical formation with the demands of contemporary early-childhood development. The traditional model of preschool teacher preparation operates on a vertical hierarchy where curricular standards, instructional content, and assessment criteria flow from ministerial bodies down to vocational education institutions (VEIs) and their students, with limited reciprocal feedback from practising preschool organizations. While this model ensures uniformity and centralized regulatory control, it suffers from significant "cognitive-formative inertia," producing graduates whose theoretical knowledge is rarely transformed into the higher-order intellectual operations required by modern early-childhood pedagogy.

From an organizational perspective, this inertia manifests as a fragmented preparation pathway in which intellectual competence — understood as the integrated capacity for analysis, abstraction, reflection, and creative synthesis — is treated as an implicit by-product of coursework rather than as a deliberately engineered outcome of the professional formation process. From a methodological perspective, the prevailing model relies disproportionately on knowledge-transmission pedagogy, whereas the development of intellectual competence demands problem-based, reflective, and practice-integrated learning environments capable of



mobilizing the future educator's analytical and metacognitive resources. The result is a paradox: a steadily increasing number of qualified diploma holders coexists with a persistent shortage of preschool teachers capable of designing developmentally appropriate, intellectually stimulating learning environments for young children. This systemic dysfunction necessitates a transition to an "Integrated Intellectual Competence Model" — a deliberate, theoretically grounded, and institutionally supported framework for the cognitive-professional formation of future preschool educators.

The theoretical basis for applying the intellectual competence framework to preschool teacher preparation is derived from L. S. Vygotsky's theory of higher psychological functions and cultural mediation. Vygotsky defined higher mental processes as "culturally mediated, voluntary forms of activity originating in social interaction." In the context of teacher education, this conceptualization translates to intellectual competence — a multidimensional construct uniting cognitive, metacognitive, reflective, and creative capacities that enable a future educator to plan, implement, and continuously reorganise developmentally meaningful pedagogical interactions with young children. Within Uzbek pedagogical scholarship, the works of N. A. Muslimov, Q. T. Olimov, and Sh. A. Sodiqova have advanced an analogous understanding, positioning intellectual competence as the integrative core of professional pedagogical mastery in early-childhood contexts.

Unlike a simple aggregate of academic knowledge (e.g., recall of developmental stages or curricular content), an Integrated Intellectual Competence represents a higher order of professional capability characterized by the following theoretical attributes:

- **Cognitive-Analytical Capacity:** The ability of the future teacher to decompose complex pedagogical situations into their constituent psychological, methodological, and contextual elements, and to reconstruct them into coherent action plans. This capacity is cultivated through case-based and problem-based learning that foregrounds the analytical engagement of trainees with authentic preschool scenarios drawn from partner organizations.

- **Reflective-Metacognitive Capacity:** Drawing upon Donald Schön's Theory of Reflective Practice, this attribute denotes the capacity for reflection-in-action and reflection-on-action — that is, the educator's ability to monitor, evaluate, and reorganise pedagogical interactions in real time and to subject completed practice episodes to systematic post-hoc analysis. The cultivation of this capacity requires structured mentoring environments shared between universities and preschool organizations.

- **Creative-Synthetic Capacity:** The capacity to generate developmentally appropriate, child-centred pedagogical solutions that integrate theoretical knowledge, contextual constraints, and the unique cognitive-emotional profile of each child. This capacity reflects what J. Dewey described as the educative reorganisation of experience and aligns with the methodological principles articulated in the "Ilk qadam" State Curriculum for preschool education.

Thus, the adoption of the Integrated Intellectual Competence Model is not merely a curricular adjustment but a fundamental shift in the epistemology of teacher preparation. It moves the system from a "knowledge-reproduction" model to a "competency-formation" model, where



the criteria of evaluation are no longer confined to the recitation of theoretical content but extend to the demonstrable capacity for analytical, reflective, and creative pedagogical action in authentic early-childhood settings.

The transition to a competency-formation model requires a radical restructuring of the institutional architecture governing preschool teacher preparation. The existing structure, in which higher-education institutions, vocational colleges, and preschool organizations function as parallel and weakly coordinated entities, is insufficient for the systematic cultivation of intellectual competence, which by its nature demands sustained interaction between theoretical instruction, supervised practice, and reflective consolidation. Therefore, the core of the proposed organizational mechanism is the establishment of a Coordinating Council for the Professional Formation of Preschool Educators, attached to the Agency for Vocational Education and operating in functional coordination with the Ministry of Preschool and School Education of the Republic of Uzbekistan.

Structurally, the Coordinating Council must possess executive rather than merely advisory powers, including authority over curricular standards, qualification requirements, and the regional distribution of state-funded student placements. The Council must represent the four principal stakeholders of the teacher-formation ecosystem:

1. Academic Sector: Representatives from teacher-preparation faculties of higher-education institutions and from specialised colleges training preschool educators (to safeguard the scientific and methodological rigour of curricula).

2. Methodological Sector: Specialists from the Institute for Vocational Education Development and the Republican Educational Centre (to translate competence requirements into validated instructional designs and assessment instruments).

3. Practice Sector: Heads and senior methodologists of state and private preschool organizations, including representatives of "Ilk qadam" pilot organizations (to anchor the formation process in the realities of contemporary early-childhood practice).

4. Regulatory Sector: Officials from the Ministry of Preschool and School Education and the Agency for Vocational Education (to ensure normative consistency with the State Standard for Preschool Education and Upbringing).

The organizational innovation lies in the redistribution of curricular authority from a single ministerial centre to a deliberative inter-sectoral body that produces binding decisions on the qualification requirements (Malaka talablari) and model curricula (Namunaviy o'quv rejasi) for the profession 40110104 — Maktabgacha ta'lim tashkiloti tarbiyachisi. The Council operates through specialised sub-committees on competence standards, practice design, and assessment validation. This arrangement ensures that the cognitive, reflective, and creative outcomes of teacher preparation are "backward engineered" from the actual pedagogical requirements of preschool organizations, rather than projected forward from inherited textbook traditions.

The organizational mechanism is further reinforced by a network of regional Centres of Excellence in Early-Childhood Pedagogy, jointly operated by teacher-preparation institutions



and lead preschool organizations in each region. These centres consolidate previously dispersed resources — model classrooms, observation laboratories, video-recording facilities for reflective analysis, and developmental assessment tools — into shared infrastructures accessible to all participating institutions. The consolidation of these resources eliminates the redundancy of underutilised equipment in individual institutions and increases overall utilisation by enabling joint methodological seminars, supervised practice, and collaborative research projects involving university faculty, college instructors, and practising methodologists.

The economic viability of the Integrated Intellectual Competence Model hinges on a financing architecture capable of sustaining long-term, multi-institutional collaboration. The proposed economic mechanism operates on the principle of Multi-Channel Financing, which integrates three distinct streams:

- **Public Educational Allocation (Base Level):** Covers the foundational expenditures of teacher-preparation institutions, including faculty salaries, instructional infrastructure, and the basic operational costs of college-based curricula. This stream is financed through the consolidated state education budget and is calibrated according to enrolment volumes and the cost of competency-based instructional delivery.

- **Targeted Competence-Development Grant (Targeted Level):** This is a competitive funding stream administered by the Agency for Vocational Education and disbursed to consortia composed of a teacher-preparation institution, at least one preschool organization, and a methodological partner. The grant finances the design of competence-based modules, the operation of regional Centres of Excellence, and the publication of methodological materials aligned with the State Standard.

- **Practice-Partnership Co-financing (Commercial Level):** The cluster entity is co-financed by partner preschool organizations, particularly in the rapidly expanding private and non-state preschool segment, which contribute through in-kind support (mentorship hours, access to children's groups, observation facilities) and, in selected cases, through direct sponsorship of advanced competency-development tracks for trainees who commit to post-graduation employment within the partner network.

Employer participation, however, requires a robust system of Practice-Partnership Incentives. Building upon the dual-education provisions of the Cabinet of Ministers Resolution No. 163 of 29 March 2021 and Resolution No. 14 of 16 January 2025 on the organization of dual education in higher-education institutions, these instruments include partial tax credits for preschool organizations that host long-term student placements, simplified procurement procedures for state-funded mentorship contracts, and the introduction of an innovative financial instrument: the concept of "Competence-Linked Vouchers" — a personalised funding mechanism through which a portion of state expenditure on each future teacher is channelled directly to the partner preschool organization that hosts that student's extended practice and successfully graduates a methodologically validated competence portfolio.



The Competence-Linked Voucher reduces the investment risk for partner preschool organizations, which have historically been reluctant to invest mentorship time in students who may never return to the host organization, while simultaneously guaranteeing a measurable return on the state's expenditure: a graduate whose intellectual competence has been validated against a standardised portfolio and whose readiness for professional activity has been confirmed by independent assessors drawn from the Coordinating Council. This balance between risk mitigation and return guarantee transforms the traditional "social expenditure" framing of teacher education into an "investment return" framing aligned with the broader human-capital priorities articulated in the Republic's national education strategy.

A crucial component of the proposed mechanism is the digitalisation of the competence-formation cycle, without which the multi-stakeholder coordination, longitudinal portfolio assessment, and evidence-based curricular adjustment envisaged by the model cannot operate at scale. The proposed system, designated the Digital Intellectual Competence Registry (DICR), aggregates standardised data on the cognitive-analytical, reflective-metacognitive, and creative-synthetic indicators of each trainee from the moment of admission to the point of post-graduation employment monitoring. The Registry collects evidence from problem-based assessments, supervised-practice observations, reflective journals, and final competence demonstrations, and synthesises these inputs into individualised competence profiles accessible to the trainee, the institution, and authorised partner preschool organizations.

Decisions on curricular adjustment, regional allocation of state-funded places, and the certification of partner organizations as Centres of Excellence are made on the basis of aggregated, anonymised DICR analytics rather than on retrospective administrative reports. This data-driven approach minimises the institutional waste associated with "pedagogical mismatch" between curricular content and practice requirements, and with "reflective stagnation" in graduates whose preparation has not enabled the systematic interrogation of their own pedagogical action.

The implementation of the Integrated Intellectual Competence Model is projected to yield transformative results across the preschool teacher-preparation system. Based on comparative analyses of international competency-based teacher-formation models (e.g., Finland's research-based teacher-education programmes, Germany's dual VET pathways), the following indicators are anticipated within a four- to five-year horizon:

- **Competence Demonstration Rate:** A projected 85–90% of graduating cohorts successfully demonstrating the full triad of cognitive-analytical, reflective-metacognitive, and creative-synthetic indicators on standardised exit assessments, compared with the current implicit and largely unmeasured rate. This indicator would mark a substantive departure from the production of "deadstock graduates" — diploma-holders whose formal qualifications are not matched by demonstrable professional competence.

- **Pedagogical Mismatch Reduction:** A projected 20–30% reduction in the proportion of newly recruited preschool teachers requiring extended on-the-job re-qualification within their first year of practice, owing to the alignment of formation outcomes with the operational requirements articulated by partner preschool organizations.



• **Reflective Practice Adoption:** A measurable increase in the proportion of early-career preschool teachers engaging in structured reflective practice (peer observation, reflective journaling, methodological self-analysis) within the first two years of employment, supported by the longitudinal mentoring component of the Centres of Excellence.

While the theoretical argument for the Integrated Intellectual Competence Model is compelling, the practical implementation faces significant "institutional friction" rooted in the inherited routines of the teacher-preparation system. The discussion highlights three primary risks that must be deliberately managed:

• **Methodological Conservatism Risk:** A substantial proportion of faculty in teacher-preparation institutions has been formed within the knowledge-reproduction paradigm and may resist the transition to competence-formation pedagogy on the grounds of disciplinary identity or pedagogical comfort. The consequence is the formal adoption of new curricula combined with the informal preservation of inherited instructional routines. Mitigation requires a sustained programme of faculty re-qualification operated by the Institute for Vocational Education Development, with mandatory certification in competence-based pedagogy as a condition of curricular delivery.

• **Coordination Asymmetry Risk:** The four sectors represented in the Coordinating Council possess unequal institutional capacities, with the academic and regulatory sectors historically dominating the methodological and practice sectors. The consequence is a deliberative body that formally includes practitioners but substantively reproduces ministerial decisions. Mitigation requires guaranteed voting weights for the methodological and practice sectors and an external audit of Council decisions by an independent expert body.

• **Measurement Reductionism Risk:** The digitalisation of competence assessment, while necessary for scale, carries the danger of reducing intellectual competence to those indicators that are easiest to quantify, thereby distorting the holistic conception of professional formation. The consequence is a sophisticated digital architecture that nevertheless misrepresents the underlying construct. Mitigation requires the methodological sector's continuous validation of DICR indicators against qualitative evidence drawn from observation, portfolio analysis, and longitudinal tracking.

In conclusion, the "Integrated Intellectual Competence Model" is not merely a curricular refinement but a strategic necessity for the systemic transformation of preschool teacher preparation in the Republic of Uzbekistan. It represents a shift from a "diploma-centric" paradigm — in which the formal qualification certifies the completion of coursework — to a "competence-centric" paradigm — in which the qualification certifies the demonstrable capacity for analytical, reflective, and creative pedagogical action. The organizational mechanism, anchored in the Coordinating Council and the regional Centres of Excellence, provides the institutional architecture through which this paradigmatic shift can be operationalised; the economic mechanism, structured around Multi-Channel Financing and Competence-Linked Vouchers, ensures the long-term sustainability of multi-stakeholder



collaboration; and the digital component supplies the evidentiary infrastructure on which evidence-based curricular and policy decisions can be founded.

For the Institute for Vocational Education Development, the following strategic actions are recommended to operationalise this model:

1. Coordinating Council Establishment: Initiate, in cooperation with the Agency for Vocational Education, the institutional design of the Coordinating Council for the Professional Formation of Preschool Educators, including the formal allocation of voting weights and decision-making authority across the four representative sectors (academic, methodological, practice, regulatory).

2. Curricular Reform: Lead the redesign of the Qualification Requirements and Model Curriculum for the profession 40110104 — Maktabgacha ta'lim tashkiloti tarbiyachisi, embedding the cognitive-analytical, reflective-metacognitive, and creative-synthetic indicators of intellectual competence as the binding criteria of professional formation.

3. Competence Registry Pilot: Launch a regional pilot of the Digital Intellectual Competence Registry in two or three provinces (e.g., Tashkent, Samarkand, Fergana), in coordination with selected teacher-preparation institutions and partner preschool organizations, with rigorous longitudinal evaluation of the pilot's outcomes.

4. Practice-Partnership Activation: Operationalise the Competence-Linked Voucher mechanism within the existing legal framework on dual education, beginning with a limited cohort of trainees in pilot Centres of Excellence and progressively scaling across the regional network.

Ultimately, the success of the Integrated Intellectual Competence Model depends on the alignment of organizational, economic, and methodological mechanisms around a single deeper principle: the recognition that the intellectual competence of the future preschool teacher is not an incidental outcome of academic instruction but the very substance of professional formation. Only through the deliberate institutional cultivation of analytical, reflective, and creative capacities can the preschool teacher-preparation system of the Republic of Uzbekistan become a true driver of the cognitive and developmental flourishing of the next generation of children.

References

1. O'zbekiston Respublikasi Prezidentining Farmoni. Kasbiy ta'limda malakali kadrlar tayyorlash tizimini yanada takomillashtirish va xalqaro ta'lim dasturlarini joriy qilish chora-tadbirlari to'g'risida. – Toshkent, 2024 y. 16 oktyabr. – PF-158-son.
2. O'zbekiston Respublikasi Vazirlar Mahkamasining qarori. Professional ta'lim tizimida dual ta'limni tashkil etish chora-tadbirlari haqida. – Toshkent, 2021 y. 29 mart. – 163-son.
3. Muslimov N. A. Kasb ta'limi o'qituvchilarini kasbiy shakllantirishning nazariy-metodik asoslari: Ped. fan. dokt. ... diss. – Toshkent, 2007. – 315 b.



4. Olimov Q. T., Mirzayeva N. A. Kasbiy ta'limda dual tizim: nazariya va amaliyot // Academic research in educational sciences. – 2021. – T. 2, № Special Issue 1. – B. 419–426.
5. Sodiqova Sh. A. Maktabgacha pedagogika. Darslik. – Toshkent: «Tafakkur Bo‘stoni», 2013. – 320 b.
6. Ibragimov X. I., Abdullayeva Sh. A. Pedagogika nazariyasi. Darslik. – Toshkent: «Fan va texnologiya», 2008. – 288 b.
7. Karimova V. M. Bo‘lajak o‘qituvchilarning kasbiy kompetensiyasini rivojlantirishda akmeologik yondashuv: Ped. fan. dokt. ... diss. avtoref. – Toshkent, 2017. – 52 b.
8. Vygotsky L. S. Mind in Society: The Development of Higher Psychological Processes. – Cambridge, MA: Harvard University Press, 1978. – 176 p.
9. Schön D. A. The Reflective Practitioner: How Professionals Think in Action. – New York: Basic Books, 1983. – 384 p.
10. Billett S. Workplace learning: Strategies and frameworks // Australian Vocational Education Review. – 2001. – Vol. 8, № 1. – P. 71–86.
11. Mulder M., Weigel T., Collins K. The concept of competence in the development of vocational education and training in selected EU member states: a critical analysis // Journal of Vocational Education & Training. – 2007. – Vol. 59, № 1. – P. 67–88.
12. Зимняя И. А. Ключевые компетенции — новая парадигма результата образования // Высшее образование сегодня. – 2003. – № 5. – С. 34–42.

