

Innovative Mechanisms For Developing Advanced Pedagogical Competencies Of School Teachers Through Informal Education

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Abstract: This article provides an in-depth analysis of the role and importance of informal education in developing the advanced pedagogical competencies of school teachers. Considering that traditional professional development systems cannot fully meet the demands of the times, international best practices and recent reforms in Uzbekistan were compared. The study reveals the proven advantages of innovative mechanisms such as Professional Learning Communities (PLCs), reverse mentoring, and digital micro-learning. In conclusion, clear recommendations have been developed on the strategic directions for independent, free, and continuous professional development to provide targeted support for teachers.

Keywords: informal education, advanced pedagogical competencies, continuous professional development, Professional Learning Communities, professional development, innovative mechanisms, micro-learning, andragogy, digital education, educational reforms.

Introduction

Let's face the situation with open eyes. The quality of an education system can never be higher than the quality of its teachers. No matter how much we perfect school curricula or bring the latest smartboards into classrooms, the human element is the cornerstone of the pedagogical process. Fundamental research on a global scale shows that strictly planned professional development courses are losing their absolute monopoly. This is the very root of the problem. A teacher cannot always find clear answers to the real problems they face in their complex daily work in standardized curricula. The result? Teacher burnout has become rampant, and the quality of teaching has begun to decline globally.

Let's consider the data from the "Global Report on Teachers," published in 2024 by UNESCO and the International Teacher Task Force. By 2030, an additional 44 million teachers will be needed worldwide to provide universal secondary education [1]. In Sub-Saharan Africa alone, this staggering figure amounts to 15 million. Interestingly, and perhaps most worryingly, the crisis is not unique to developing countries. Even in the highly developed education systems of North America and Europe, retaining qualified teachers is becoming an impossible task.

Global Teacher Crisis: Forecast to 2030 and Attrition Indicators

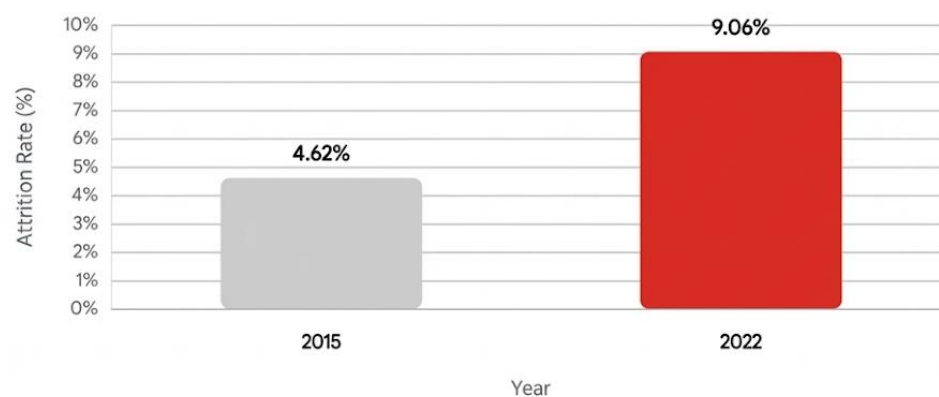
44 million

Global Teacher Shortage by 2030

15 million

Shortage in Sub-Saharan Africa

Growth in Primary School Teacher Attrition Rate (First 5 Years of Work)



The teacher attrition rate for elementary school teachers rose from 4.62 percent in 2015 to 9.06 percent by 2022 — an increase of nearly twofold, which shows how much systemic approaches have failed [1]. So, how can this process be stopped? The reason is simple. The traditional institutional system is failing to adequately respond to the pedagogue's psyche and individual needs. The global community sees the solution in alternative, flexible forms of continuous professional development—specifically, in the recognition and widespread implementation of **informal learning** mechanisms [1,6].

1. The Conceptual Architecture of Informal Education

We often perceive education as a very serious process that takes place only within the four walls of a school, institute, or training center, strictly bound by a fixed timetable. Is this really the case? Not at all. Education and learning are a continuous phenomenon that takes place throughout a person's entire life, in every small social interaction, in working through practical mistakes, and in gaining intangible experiences. Scholars have understood this since ancient times.

The philosophical roots of the concept of “informal education” directly trace back to the “learning from experience” theories of the American thinker John Dewey. The scholar who first systematized this social process from the perspective of andragogy (adult education) was Malcolm Knowles. In his work “Informal Adult Education,” he demonstrated that self-direction is a crucial factor[2]. His revolutionary recognition was that andragogy is not the art of teaching people something, but of helping them learn on their own.

In 1974, Philip Coombs and Ahmed classified types of education into three major categories [3]:

Formal education: A strictly institutionalized, vertically hierarchical system that follows a single set of rules, encompassing everything from kindergarten to higher education (including specialized professional development institutions).

Non-formal education: Structured learning activities organized outside of a strict formal system for target groups of a certain age or profession, but still based on some educational goal (e.g., foreign language courses,

vocational training, short-term paid professional development modules).

Informal education/learning: A continuous and organic process of learning that people engage in throughout their lives from life experiences, direct interaction with their environment, and through the exchange of experiences with colleagues and friends, both intentionally and sometimes unintentionally. (incidental) continuous and organic process. It is not directed toward any specific bureaucratic goals, test results, or the acquisition of a diploma (certificate).

This logic is very easy to understand in practice. Two colleagues in a teachers' lounge discussing a challenging student and recommending a new method to each other—that is the purest and most valuable form of informal learning.

2. The Crisis of Advanced Pedagogical Competencies and Networked Solutions

On the threshold of the digital age, the concept of “advanced pedagogical competency” has changed its essence. The modern teacher must be a versatile professional who can integrate a STEM approach into their lessons and collaborate with artificial intelligence (AI) systems [4].

However, these complex analytical and psychological skills cannot possibly be learned in traditional, five-yearly professional development courses. This is a pipe dream. Can you give everyone the same pill and make them all healthy? Of course not. Professional Learning Communities (PLCs) are easily filling this huge gap that the bureaucratic system is failing to address. As Nguyen et al. [5] point out, teachers are more persistent in trying out new methods due to the sincere interaction among peers in informal learning communities. A mere ten-minute conversation in the school hallway often provides more pedagogical solutions than a three-hour boring lecture.

Table 1. A Fundamental Analysis of Teacher Development Models

Analysis Criteria	Traditional formal professional development	Informal learning model (PLC)
Management Style	Vertical, centralized (Top-down)	Autonomous, horizontal networked (Peer-to-peer)
Curriculum	Strictly standardized, mass-produced	Flexible to the individual needs of each educator
Time and Space	Dedicated time and institutional setting	Natural, continuous, on-the-job
Motivation	External (certificate, credential)	Internal (solving a real problem, interest)

3. International Practice

Economically developed countries have already stopped viewing informal education as some kind of “secondary” detail. The European Union and the Organisation for Economic Co-operation and Development (OECD) legally recognize it as a fundamental element of lifelong learning [6].

One of the most important mechanisms is the validation of prior learning. A school teacher in Europe has the right to easily convert their rich informal experience gained over the years (e.g., their online explorations or independently learned programming skills) into formal credits (ECTS). In the Netherlands and Scandinavian countries, teachers' hours of “self-directed study” are included in their official workload. If a professional's research and work are materially valued, they will move mountains.

4. The Uzbekistan Experience

In Uzbekistan, too, recent years have seen rapid reforms to move teacher professional development from outdated, tedious confines to comprehensive digital platforms. The massive “Continuous Professional Development” e-platform, launched in 2022, has provided teachers with the opportunity to learn at their own convenience, without being separated from the teaching process. According to the A. Avloni Institute, in a short period, more than 81,000 educators engaged in this informal digital space. Most importantly, advanced teachers who worked independently to earn an international certificate were guaranteed a salary increase of up to 100 percent. It is human nature that a fair economic reward serves as a real engine for informal development.

Summary and Recommendations

The competencies of a modern teacher cannot be satisfied by rigid models alone. In this process, it is necessary to implement the following specific mechanisms:

- 1. Reverse Mentoring:** Young teachers teach experienced mentors how to use artificial intelligence (ChatGPT, digital platforms), while older educators, in turn, share the secrets of psychological classroom management.
- 2. Tinkering:** Educators need safe laboratory environments (Makerspaces) that allow them to experiment with innovations within the school without fear of failure. A teacher should not be afraid to make mistakes [7].
- 3. Micro-learning:** Targeted learning infographics and short videos, delivered via a mobile app for just 5-10 minutes a day, are much more easily retained by the brain than traditional long lectures.
- 4. Integration with the community (LOPI):** One of the most important and widely researched areas in informal education theory is the "Learning by Observing and Pitching In" (LOPI) model. The better the school is integrated with the local community and social issues, the more practical experience the teacher will gain.

Our recommendations for the future of education:

- **Legitimize informal experience:** Similar to European countries, Uzbekistan should urgently launch a "Single Assessment Matrix" that automatically converts a teacher's extracurricular research and created open lesson plans into academic credits.
- **Foster a PLC culture:** The high-pressure, report-driven school board meetings should be replaced by open, non-threatening "methodological messages" among peers.
- **Platform Socialization:** Developing robust "social networking" elements within the "Continuing Professional Development" system, where thousands of teachers can exchange live experiences, would be a crucial step.

Active human capital does not live in rigid molds; it truly flourishes only where there is trust and freedom. The education system should not command this process, but only serve it with care.

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