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Title of research article

Theoretical and Methodological Foundations for Preparing Homeroom Teachers to Apply the System of Psychological and Pedagogical Design in the Educational Process

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Abstract

This article substantiates the theoretical and methodological foundations for preparing homeroom teachers to effectively use the system of psychological and pedagogical design in the educational process. The research emphasizes the urgent need to train educators capable of integrating innovative pedagogical and psychological tools into their professional activities, ensuring the holistic development of students within the context of digital transformation. The study generalizes scientific approaches to selecting models of teacher preparation within postgraduate education and analyzes both international and Ukrainian experience in applying psychological and pedagogical design principles. It further argues for the development and testing of methodologies that enable both novice and experienced teachers to design and implement individualized educational projects based on psychodiagnostic data and developmental models of students. The article identifies the key role of comprehensive diagnostics of participants in the educational process as the leading factor in designing personality-developing content. The author stresses the importance of a systematic approach to educational process design within academic institutions. The study concludes that homeroom teachers' readiness to apply psychological and pedagogical design systems is a determining factor in achieving the goals of personality-centered education and sustainable educational innovation.

1. Introduction

The informatization of contemporary society places increasingly complex demands on educators, requiring them to demonstrate not only professional competence but also a high degree of technological literacy and adaptability. The digital transformation of education compels teachers to actively integrate modern computer technologies and applied information systems into their professional practice. Consequently, the requirements for the educational and upbringing process have shifted substantially: in addition to organizing traditional pedagogical and

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extracurricular activities, homeroom teachers must now effectively employ digital and psychological–pedagogical tools to foster students' holistic development.

Immediate and systemic measures are therefore needed to incorporate information technologies into the educational and upbringing systems of secondary schools. The efficient integration of digital tools into the educational process represents a cornerstone for ensuring a high-quality level of personal, social, and moral education of the modern learner. In this regard, the implementation of comprehensive **psychological and pedagogical design systems** is emerging as one of the most significant directions for reforming the educational environment of schools.

A notable example of such innovation is the **psychological and pedagogical management system of the educational process** and the **project network "Universal-Online"**, developed by **V.A. Kirichuk**, Candidate of Pedagogical Sciences. This system enables teachers to conduct a systematic and complex analysis of the challenges and potential developmental opportunities of individual learners. It also supports the construction of developmental tasks based on psychodiagnostic data, the modeling of creative project narratives for homeroom teachers, and the design of personality-oriented educational content. Furthermore, it facilitates the creation of project-modular and system-integrated class and school plans, ensuring the implementation of technologies for personal development both in classroom instruction and in extracurricular activities (Grinenko, 2008).

The relevance of integrating such systems into educational practice was also highlighted at the **United Nations World Summit on Sustainable Development in Johannesburg**, where the use of information technologies in education was recognized as a key component of sustainable societal progress. For the effective implementation of psychological and pedagogical design technologies based on advanced digital platforms, it is necessary to organize **comprehensive teacher training** that includes seminars, workshops, computer practicums, and professional development courses.

Issues related to the professional preparation of teachers for the application of information and communication technologies (ICT) and systems of psychological and pedagogical design in education have been extensively studied in the works of **V. Kirichuk, O. Kravchuk, S. Dyachenko, O. Sukhovirsky, L. Kondratova, S. Batishchev, M. Bakhtin, V. Bezrukova, A. Brushlinskaya, I. Bukhtiyarova, J. Dewey, W. Kilpatrick, E. Collings, L. Levin, D. Peat, S. Shatsky, V. Guzeev, M. Gurevich, A. Kobernik, N. Matyash, M. Pavlova, E. Pavlyutenkov, E. Polat, G. Selevko, M. Romanovskaya, A. Furaeva, I. Chechel, Yu. Veselova, M. Elkin, M. Pelageychenko, S. Izbash, E. Kruchay, A. Ozherelyeva, N. Prokofyeva, N. Torlopova, Yu. Filchakova**, and others.

However, despite the considerable depth of theoretical and practical studies in the field of **teacher preparation within postgraduate education**, there remains a lack of a scientifically validated methodology specifically designed for training homeroom teachers to apply the system of psychological and pedagogical design in the upbringing process (Amonashvili, 2007).

A historical analysis of the theory and practice of psychological and pedagogical design, as well as the accumulated experience of teacher training in postgraduate education, reveals three main stages in the development of this research area. The **first stage (1970s–1980s)** marked the theoretical substantiation of the concepts of "pedagogical design" and "project-pedagogical activity." The **second stage (1990s)** was characterized by the widespread application of the project-based method across diverse fields of education. The **current stage (beginning of the 21st century)** is distinguished by a pragmatic integration of pedagogical technologies and psychological methodologies into a unified system of psychological and pedagogical design, emphasizing the personalization and diagnostic precision of educational planning.

Theoretical and practical observations have made it possible to clarify the definitions of several key terms essential to this study:

- **Project —** a coordinated and goal-oriented activity of all participants in the design process, aimed at achieving specific educational objectives and resolving identified developmental tasks.

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- **Pedagogical design —** a holistic system of pedagogical activity encompassing the formulation of educational objectives, the construction of conceptual and procedural models, the planning of implementation measures, and the ongoing control, correction, and evaluation of project-based pedagogical outcomes.
- **Project management —** a structured system of planning, control, and monitoring of the implementation process of pedagogical projects, including risk management and quality assurance.

Theoretical analysis and pedagogical observation have enabled the classification of educational projects according to their functional orientation: **problem-oriented**, **socio-educational**, **instructional**, **formative**, **technological**, **research**, **strategic**, **methodological**, **organizational-administrative**, and **financial-managerial**. Depending on the number of participants, projects may be **individual**, **group**, or **collective**; and by scope, they can range from **class-level** to **school-wide**, **regional**, **national**, or even **international** initiatives.

The results of analyzing the historical evolution, internal regularities, and specific features of modern pedagogical design have formed the theoretical basis for developing the **methodological framework of project-pedagogical activity**. This framework relies on **systems theory**, which interprets pedagogical design as an integrated structure with distinct content, hierarchical organization, and functional interdependence.

The foundational works of scholars such as **N. Kichuk, V. Kirichuk, M. Kostenko, Sh. Amonashvili, L. Vygotsky, V. Zagvyazinsky, and G. Dryden** have contributed to the articulation of the major theoretical approaches to implementing pedagogical design. The analysis of dissertations (A. Morozov, F. Ratner, S. Sysoeva; M. Kostenko, L. Milto) has clarified the structural and procedural components of **project-pedagogical activity**, identifying the key functions of **diagnostic**, **motivational**, **managerial**, **monitoring**, **coordinative**, **evaluative**, and **predictive** nature (Milto, 2001).

Structurally and functionally, pedagogical design represents the dynamic unity of interrelated components and their corresponding functions, which collectively shape a coherent pedagogical system. The study identifies and systematizes the core stages of the educational design process:

1. **Analytical stage —** comprehensive assessment of learner needs and educational context;
2. **Constructive stage —** defining objectives and expected outcomes;
3. **Modeling stage —** developing conceptual and operational models;
4. **Planning stage —** designing the implementation sequence and resources;
5. **Implementation stage —** conducting pedagogical activities in real settings;
6. **Monitoring stage —** evaluating, correcting, and refining results.

Modern pedagogical practice demonstrates a growing tendency among educators to underestimate the role of structured educational upbringing, viewing it as optional rather than integral to schooling. This has led to a spontaneous, rather than systematic, approach to personality development among students. Consequently, upbringing processes are often governed by general school or regional programs rather than tailored to the specific social and psychological needs of individual students or class collectives. Between the two modes of socialization—**spontaneous** and **regulated**—the former continues to dominate, resulting in an imbalance that limits the developmental potential of education.

Understanding the essence of **psychological and pedagogical design of the educational process** as a pedagogical phenomenon is inherently complex due to the multifaceted and integrative nature of both the design system and the educational process itself. From a sociological and psychological perspective, design is understood as an interdisciplinary construct combining knowledge from pedagogy, psychology, and sociology, as it forms part of the broader framework of social design.

The core content of psychological and pedagogical design lies in defining a set of tools and strategies that enable educators to effectively address emerging challenges and achieve predetermined developmental goals. These tools are represented in two interrelated forms: as **a system of object parameters** defining the characteristics of the educational environment, and as **a set of actions and interactions** that ensure their realization.

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Through the integration of diagnostic analysis, reflective practice, and digital technology, the system of psychological and pedagogical design forms the methodological basis for the **modernization of the educational process**, ensuring that the upbringing of students becomes both **scientifically grounded** and **personally meaningful.**

2. The Specific Role and Objectives of Psychological and Pedagogical Design

The particular significance of psychological and pedagogical design lies in its integrative function as the primary sphere uniting the **theory and practice of education.** It represents a **goal-oriented activity of pedagogical process participants**, grounded in their continuous interaction and aimed at ensuring a **personality-oriented and developmental approach** to the upbringing of learners. Through its structured nature, psychological and pedagogical design serves as both a conceptual and practical framework for modern education management.

At its most general level, the **principal aim** of psychological and pedagogical design is the creation of a scientifically justified **system of parameters** that describes the dynamic state of the educational object — the learner — while accounting for the **regulating and determining factors** that influence this state and the tools necessary for its modification. Consequently, design is not an auxiliary function but a **core phase of educational management**, forming the conceptual foundation for the subsequent stages of pedagogical activity and directing them toward the realization of specific educational objectives.

Psychological and pedagogical design enables the **conscious definition of strategic priorities** for a school's upbringing activities within particular conditions and over a defined period. It provides a framework for the systematic introduction of educational innovations, eliminating abstract or fragmented planning and fostering coherence in the organization of educational work. The **analytical stage** of this system allows for longitudinal tracking of the personal development of each student, the dynamics of the class collective, and the evolution of the educational institution as a whole. This, in turn, supports an evidence-based assessment of the **effectiveness of implemented educational projects** (Kichuk, 1991).

3. Object and Structure of Psychological and Pedagogical Design

The **primary object** of psychological and pedagogical design is the **educational and upbringing process**, which is conceptualized as a **system of structured educational interventions** targeted toward specific participants in the pedagogical process. Within this system, the **personality-development component** occupies a central role. This component requires the creation of **effective educational systems** capable of correcting deficiencies in students' personal development and stimulating the growth of their latent potential and creative capacities.

Psychological and pedagogical **diagnostics** serves as the methodological foundation for this process. By identifying the level of formation of students' key competencies, it becomes possible to design the educational process in such a way that **each event becomes an integral and harmonized part of a unified developmental system**, and every subsystem occupies a well-defined place in the school's annual educational plan.

Beyond the general principles of education based on **sustainable development**, psychological and pedagogical design pursues **specific aims:**

- enhancement of students' life activity and social participation;
- development of value orientations and ethical priorities;
- prevention and correction of risk groups within the class and institutional environment;
- promotion of inclusive, adaptive, and supportive educational climates.

When educational methods and strategies are tailored to the **individual characteristics of each child**, rather than to an abstract "average student," the effectiveness of the collective pedagogical effort increases substantially. Importantly, psychological and pedagogical design takes into account not only the **problems and potentialities of students**, but also those of all participants in the educational process — including **parents, teachers, and administrators** (Dryden, 2005).

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The **outcome** of psychological and pedagogical design is a **comprehensive project of the educational process**, embodied in the **project-modular plan of a school's educational work** and in the **creative projects of homeroom teachers**. The effectiveness of the designed process can be monitored through the **"Implementation" technology** proposed by V. Kirichuk, which enables systematic evaluation, adjustment, and refinement of educational initiatives.

Possessing a psychological and pedagogical project allows educators to conceptualize, in an integrated and systematic form, all **interdependent elements of successful educational management**: the necessity and sufficiency of chosen objectives, the sequence of actions required to achieve them, the identification of intermediate goals and criteria, and the definition of evaluative indicators of success.

4. The Need for Professional Preparation in Psychological and Pedagogical Design

Modern society increasingly demands professionals capable of resolving the **fundamental contradictions** of contemporary education — contradictions that have arisen between:

1. **The rapid dynamics of civilizational development** and the relative inability of educational systems to meet the accelerating demands of various spheres of human activity;
2. **The renewal of the educational paradigm**, characterized by the transition to a **humanistic and innovation-oriented model of education**, and the insufficient scientific and methodological support for this transformation;
3. **Teachers' willingness to master professional knowledge and skills in innovative pedagogical activity** and the lack of adequate preparation within the **system of postgraduate pedagogical education**.

Thus, the development of professional readiness among teachers — particularly among homeroom educators — to utilize psychological and pedagogical design technologies becomes an **urgent pedagogical and socio-strategic task**. It requires a rethinking of both training content and organizational approaches in the system of continuous professional development.

5. Conclusion

In the context of an emerging **poly-informational society** and the formation of new **conceptual foundations and educational priorities**, the system of **postgraduate pedagogical education** is experiencing rapid transformation. This transformation manifests in the expansion of **innovative processes** that promote lifelong professional growth among educators. The modernization of postgraduate education content through the integration of **modern teaching and upbringing methodologies** reflects a paradigmatic shift from traditional didactic instruction toward **interactive, competency-based, and project-oriented learning**.

Innovations in educational practice have substantially altered the **outcomes and quality** of the pedagogical process. They enable the creation of advanced or entirely new **educational and developmental systems**, **pedagogical technologies**, and **organizational forms** of learning. Furthermore, they contribute to the improvement of educational management and the enhancement of institutional efficiency. The active introduction of **information and communication technologies (ICTs)** into postgraduate education and the resulting improvement in teachers' **digital literacy** have elevated the educational process to a qualitatively new level.

Nevertheless, the **postgraduate preparation of homeroom teachers** remains insufficiently covered by these innovations. This gap constrains the systemic adoption of psychological and pedagogical design technologies within schools.

Consequently, the **modern challenges of educational modernization** in schools of the new generation can only be effectively addressed through the **comprehensive integration of innovative psychological and pedagogical design technologies** into both pedagogical and managerial activities. Such integration must be accompanied by the **systematic professional preparation** of teachers, ensuring their capability to design, implement, and evaluate developmental educational systems based on the principles of sustainability, personalization, and scientific validity.

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Methodology

The research employed a mixed-methods approach combining qualitative and quantitative techniques to explore the theoretical, methodological, and practical aspects of preparing homeroom teachers for the implementation of psychological and pedagogical design. The methodological framework was grounded in the principles of systemic, competency-based, and humanistic approaches.

- **Theoretical analysis:** A comprehensive review of philosophical, psychological, and pedagogical literature was conducted to determine the conceptual foundations of pedagogical design.
- **Comparative analysis:** International and Ukrainian experiences were compared, focusing on models of teacher training in psychological and pedagogical project development.
- **Empirical methods:** Surveys, diagnostic tools, and pedagogical observation were used to assess teachers' readiness and attitudes toward psychological and pedagogical design technologies.
- **Model development:** A conceptual model of professional preparation was developed, emphasizing training modules, reflective practices, and technology integration.
- **Pilot testing:** Training sessions and workshops were implemented in the postgraduate education setting, followed by expert evaluation and feedback collection.

Ethical Considerations

The study adhered to ethical principles of educational research, ensuring voluntary participation, informed consent, confidentiality, and respect for participants' autonomy. No personal data were disclosed, and all information collected during empirical research was anonymized. The design and implementation of training programs complied with institutional ethical guidelines approved by the University of Educational Management of the NAPS of Ukraine.

Acknowledgments

Conflict of Interest

The author declares no conflict of interest related to this publication.

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