Cycles
Economic
Development



Analysis of the Current State of Education in Ukraine in the Context of Its Digitalization and Telecommunications Development

Ph.D., as Prof. ***Liubov Chagovets,***
PhD, Lecturer, ***Polianskyi Vladyslav***
Ph.D., as Prof. ***Gvozdytskyi Vitalii***,
Intellectual Management Systems Department,
Simon Kuznets Kharkiv National University of Economic

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Introduction

A fundamental rethinking of the paradigm of higher education on a global scale, in which digitalization of processes is already considered a condition for survival and adaptation of educational institutions, and not just a tool for optimizing activities, took place during the complex events of recent times

Developing digital skills among the population—particularly within demographic groups requiring special attention and adaptation—is a key factor in the education system and serves as a foundation for building a competitive national economy.

The issue of integrating individuals with special needs into societal processes and ensuring their effective socialization has become particularly pressing in the current environment. Adapting existing inclusive practices within the education system plays a crucial role in this regard.

Analysis of recent research

The current lack of a unified approach to developing digitalization management systems and assessing disparities in digital maturity. Among the issues requiring further attention is the absence of a unified model for integrating infrastructure, services, and open resources.

1. **Formulation of digitalization strategies and the creation of management models**, present a comprehensive vision of digitalization processes that encompasses infrastructure, technology, and the regulatory framework (A. Krulevskyi, O. Poddenezhnyi, V. Osadchyi, V. Chiporniuk, V. Kremen, V. Bykov, and O. Liashenko, Yu. Zakharova)
2. **The transition from a traditional academic center to a digital educational and research complex** (Yu. Holovni, O. Voronenko)
3. **Digital tools for transforming the educational process** focusing on adaptability, inclusion, methodological and pedagogical barriers to digitalization and the modeling of IT solutions to support the education of individuals with special needs (T. Pavlysh, Yu. Safonov and O. Korotun, Yu. Semeniako, Ye. Bohonko, O. Shelever, and K. Dereka, S. Titarchuk and P. Malezhyk, A. Smirnova and O. Horbatiuk, S. Trubachova, O. Mushka, and P. Zamaskina, A. Ramskyi, O. Tarnopolska, L. Familiarska, Yu. Tulashvili and V. Kosheliuk, I. Chushchak and V. Andrunyk

Main problems

1. Issues such as the **uneven development of digital ecosystems** – driven by evolving infrastructure, services, and open resources—and the lack of a universally accepted, comprehensive model for digital ecosystems within the context of inclusive education call for further development and improvement.

1. **Obstacles hindering the digitalization of inclusive education** – such as traditional practices, insufficient methodological support, and the lag in adapting digital content to the changing technical capabilities of inclusive systems – necessitate the creation of new approaches to managing digital development. These approaches should be grounded in systems analysis and utilize adaptive technologies for staff training.

1. **The diversity of views regarding indicators for the regular monitoring of digital development** levels in higher education institutions (HEIs) highlights the need for a set of additional information models to assess and analyze the state of digitalization; such models would facilitate higher-quality management decisions within the inclusive education system.

RESULTS

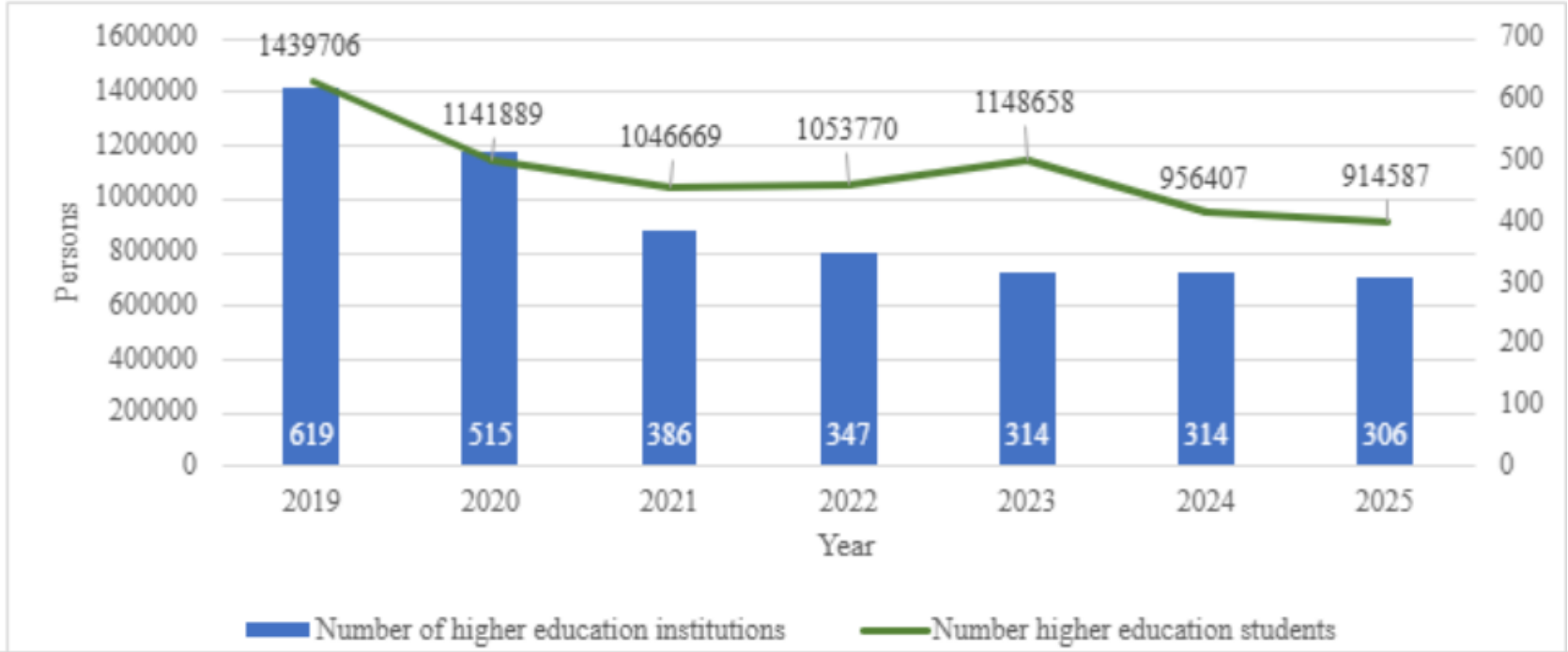


Fig. 1. Number of higher education institutions and higher education students
Source: compiled by the author based on data from

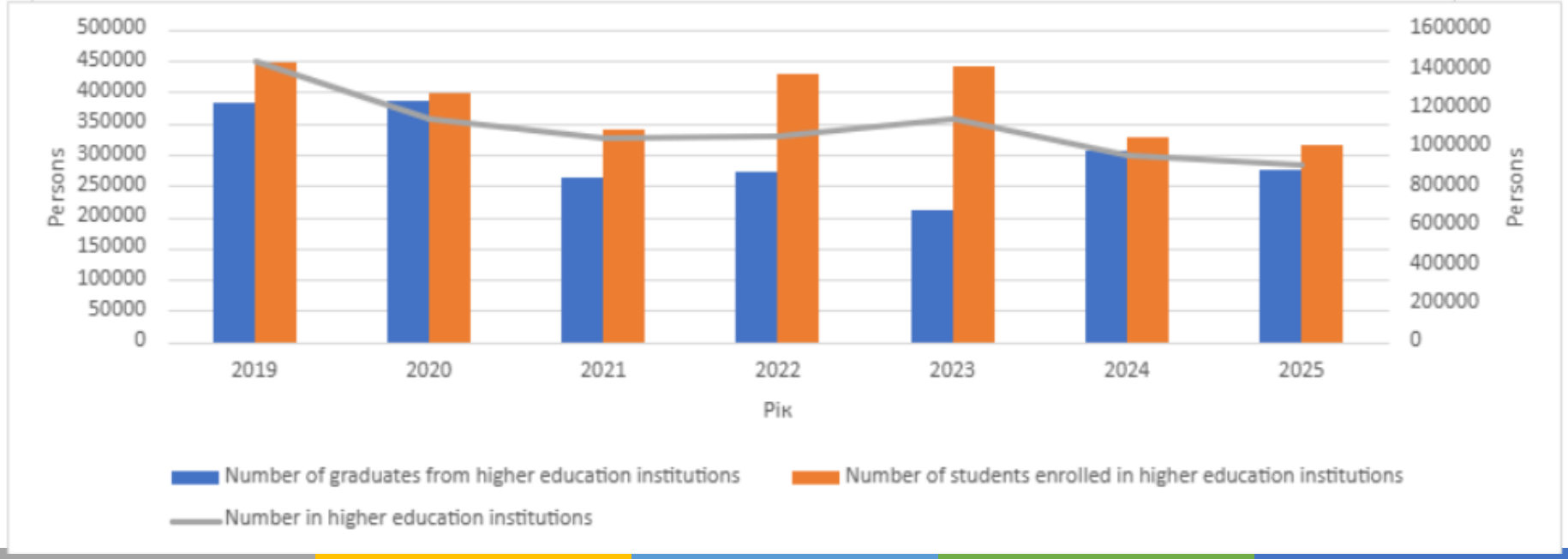


Fig. 2. Dynamics of the number of higher education students across all degree levels

Processes also contributed to a reduction in academic and teaching staff. There is a noticeable trend toward a decrease in the proportion of young lecturers and those without an academic degree within the total teaching workforce, while the share of lecturers holding academic degrees has remained relatively stable

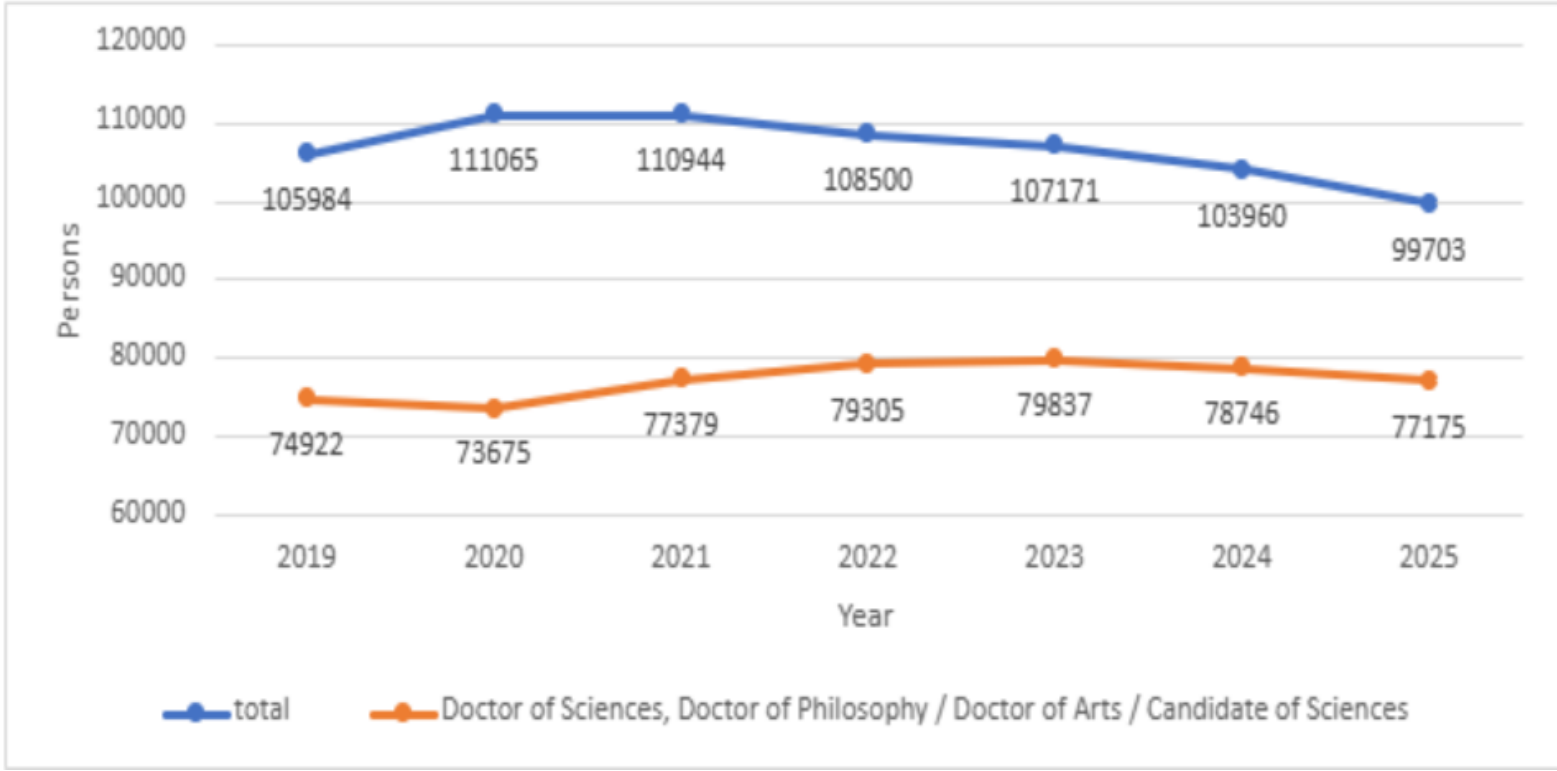
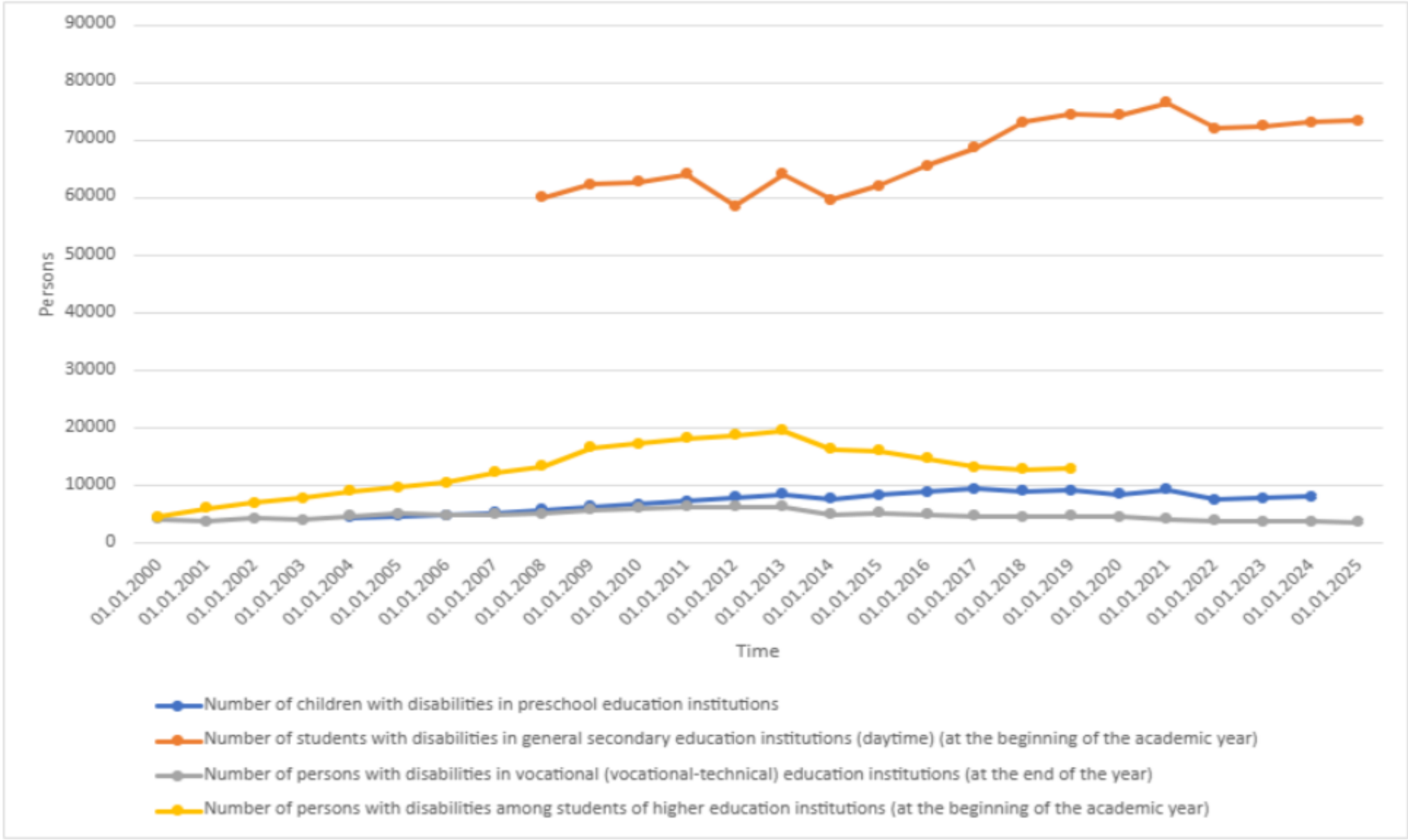


Fig. 3. Number of teaching staff in higher education institutions

Inclusivity

Fig. 4. Number of persons with disabilities in educational institutions



Inclusivity

Inclusivity plays a crucial role; it is defined as an individual's ability to manage their social status and achieve an adequate level of well-being by realizing their competencies within a barrier-free environment and through equal access to education

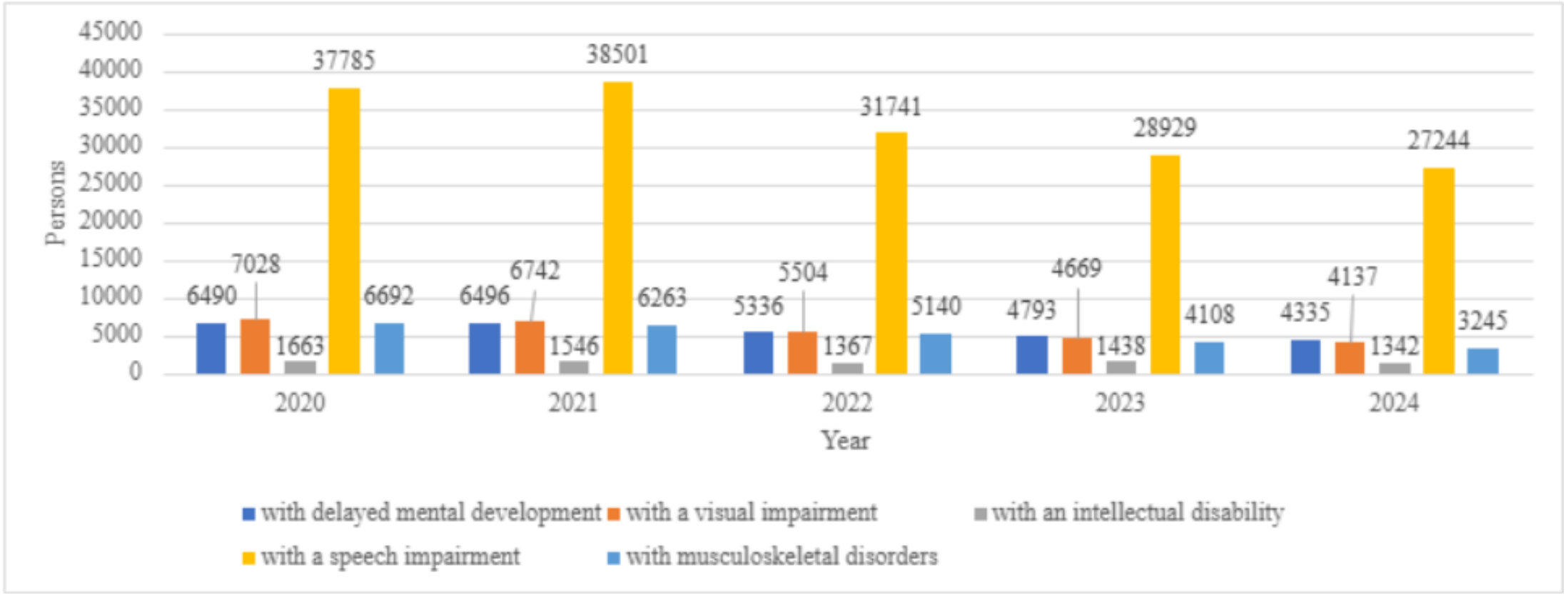
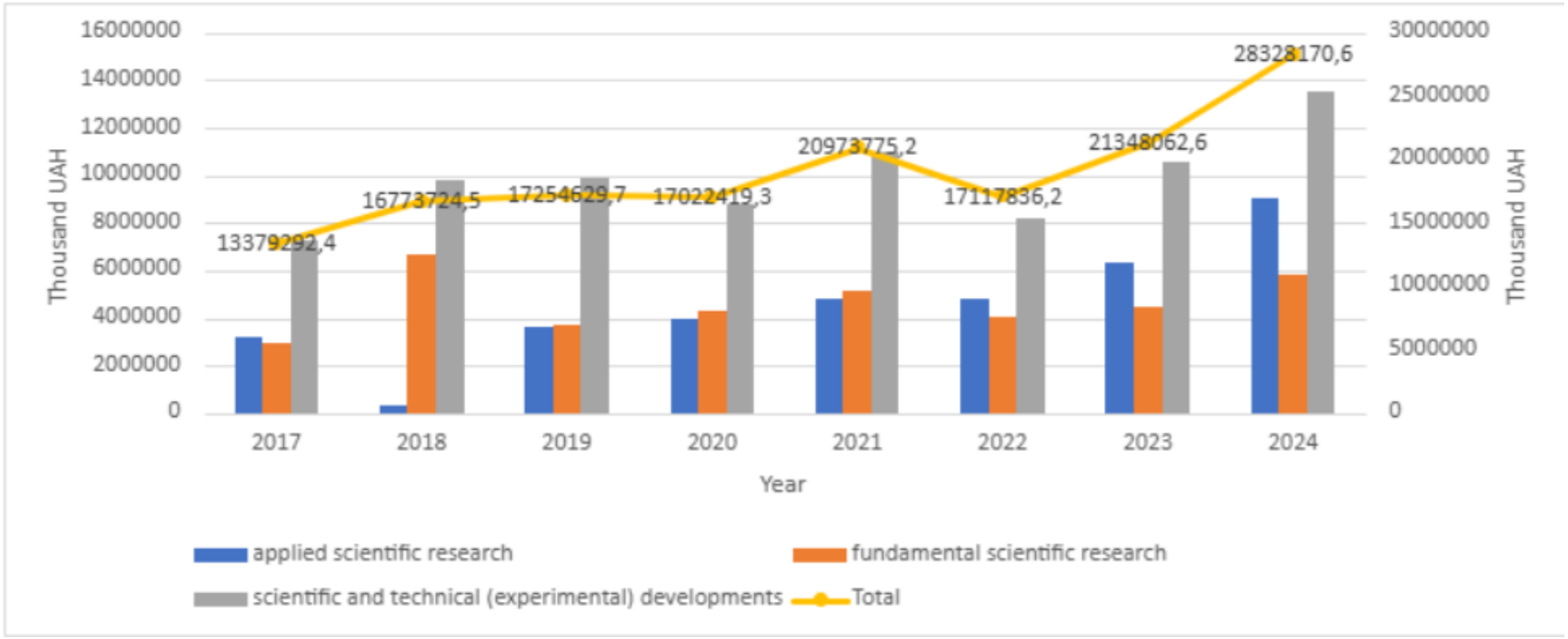


Fig. 5. Number of children in specialized preschool education institutions



A key aspect of this digital transformation is the modernization of the education financing system through state grants.

Fig. 6. Expenditure on research and development by type of activity

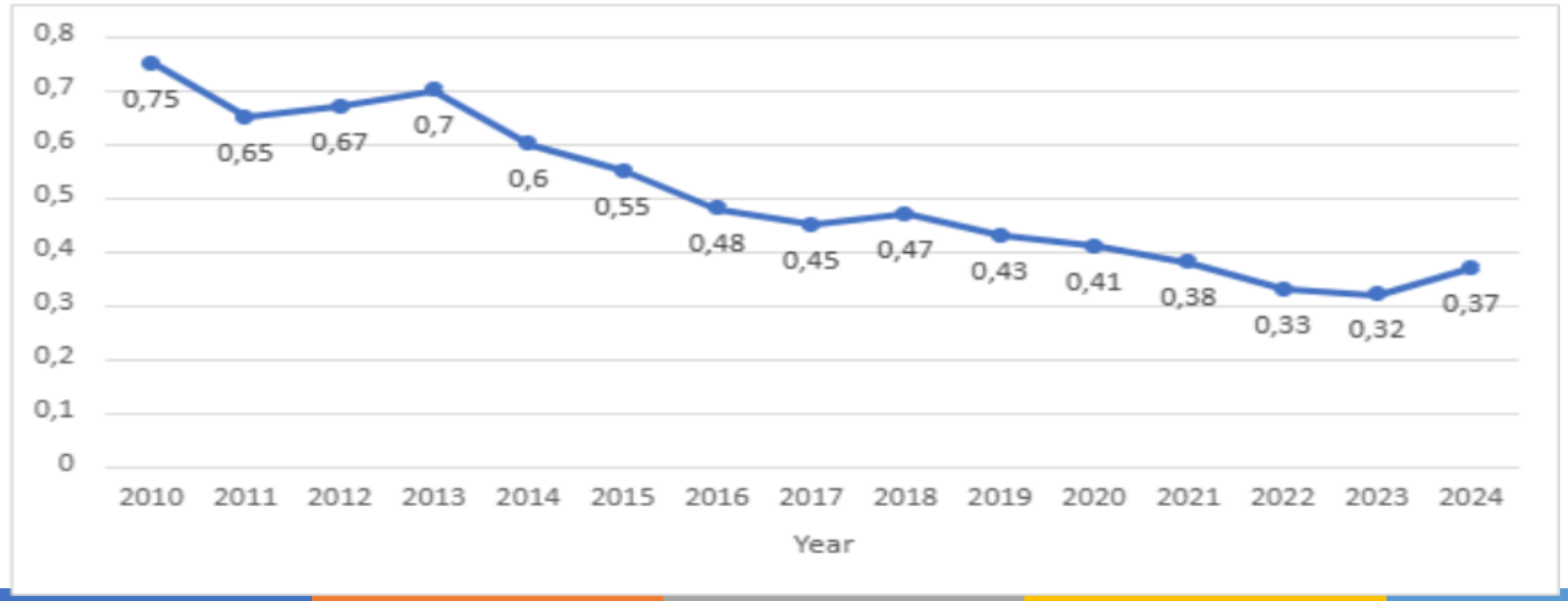
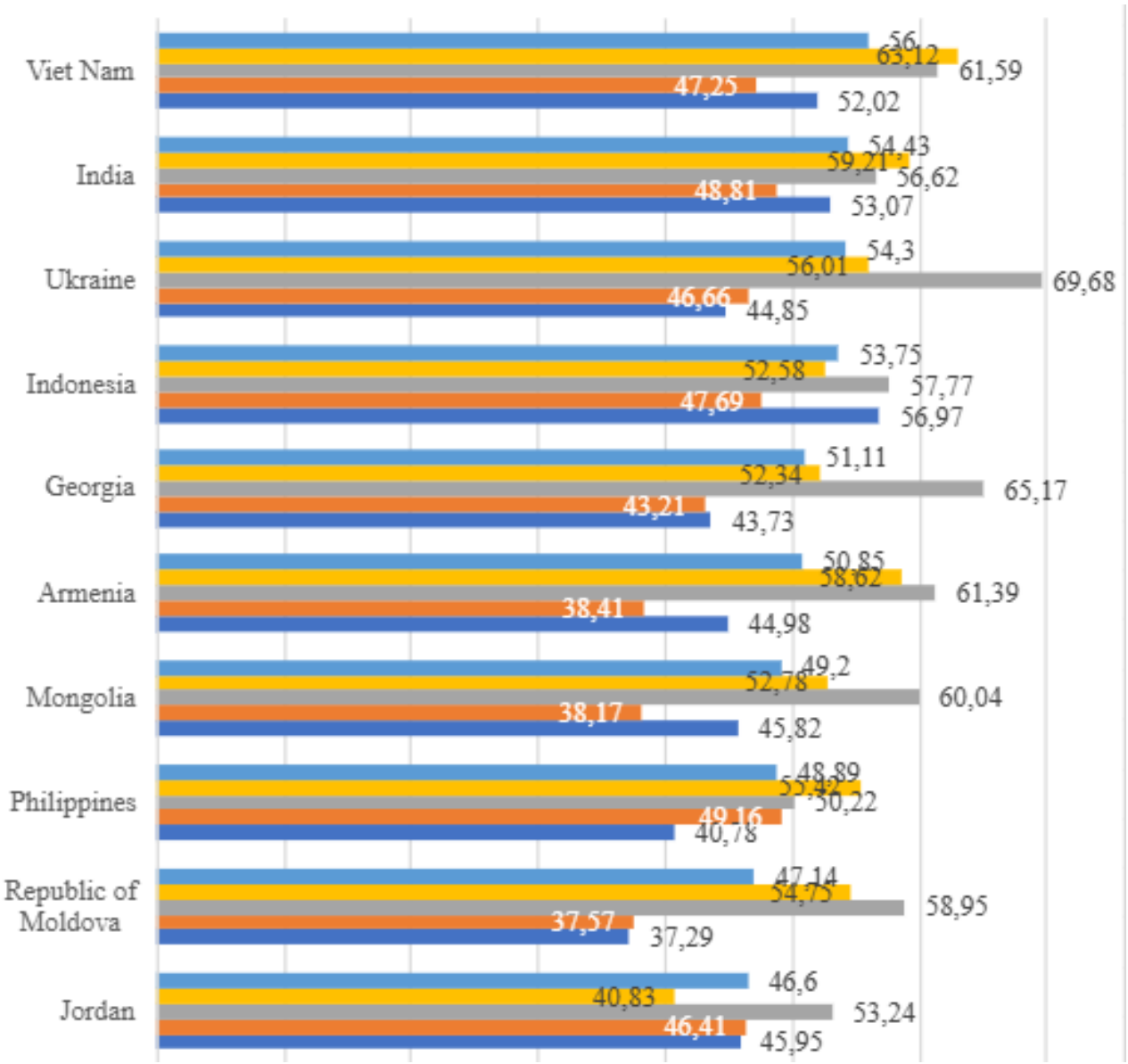


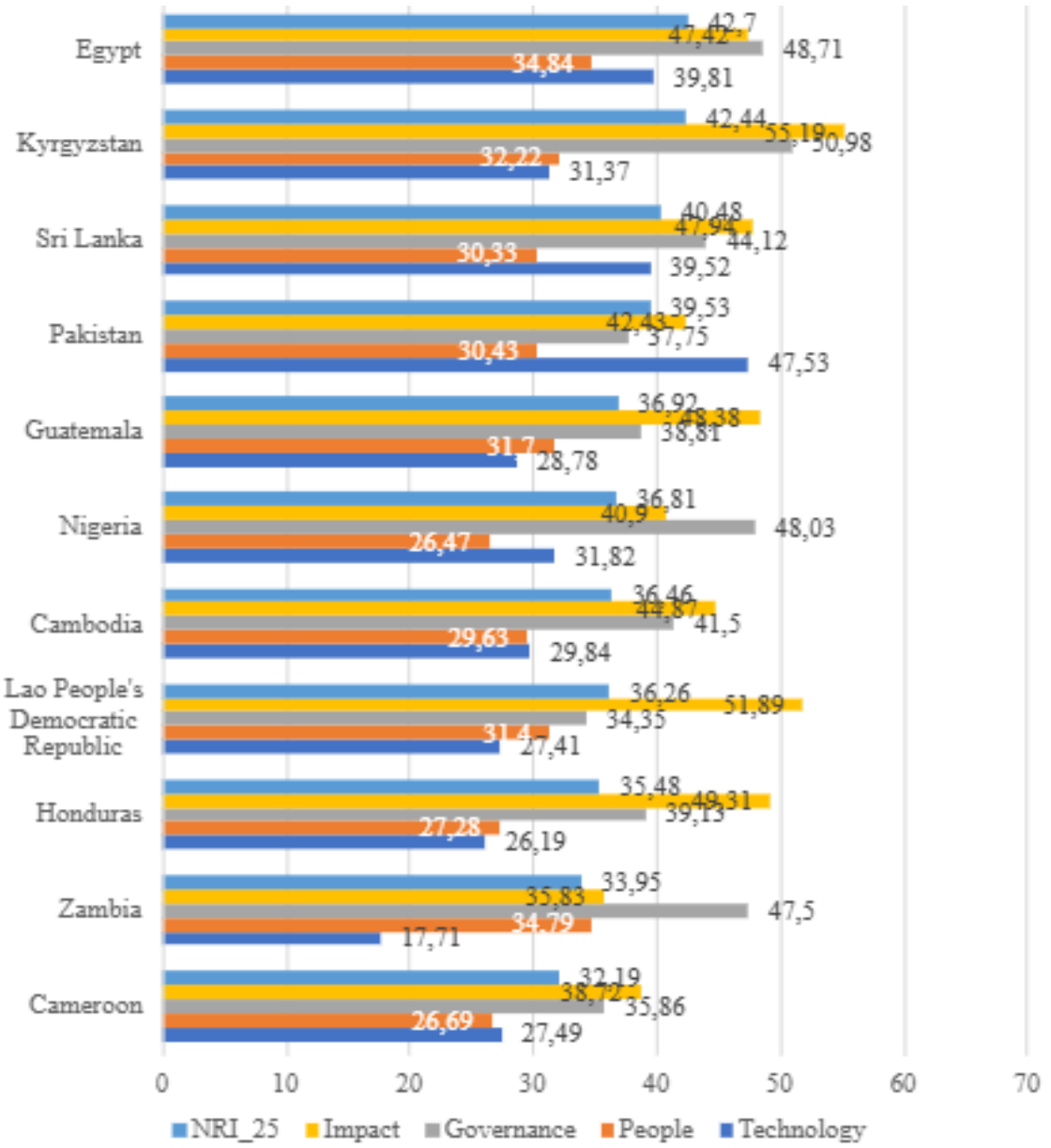
Fig. 7. Share of research and development expenditure in GDP, %

Context of education digitalization

1. Approaches to assessing digital development—which rely on economic development indicators—should also incorporate social indicators; together, these form a comprehensive measure of the level of digitalization and digital development.
2. In the context of education digitalization, such an integrated assessment must account for sub-indices of digital development within educational systems, which constitute a component of the overall digitalization level of social institutions.
3. A detailed analysis and assessment of the potential for developing modern educational ecosystems—specifically regarding inclusion—requires examining the country's digital development status and its standing in global digitalization rankings.

Networked Readiness Index





CONCLUSIONS

1. The digitalization of education has evolved beyond being merely a tool for educational modernization. It has **acquired strategic importance by enabling continuous learning, mobility, and accessibility for vulnerable population groups**, while facilitating subsequent connection to and integration into the international scientific community.

2. An analysis of key barriers to interoperability and inclusion within existing systems reveals that **only a comprehensive approach and vision can create an effective, secure, and accessible digital educational environment**.

3. Drawing on contemporary global and national experience in addressing educational challenges it is evident that **a holistic approach to establishing a unified digital educational space** is essential to ensuring the continuity of higher education processes amidst persistent external information and physical threats. Such a digital ecosystem must address the needs of all user categories, remain resilient during crises, and guarantee continuous learning despite infrastructure limitations and existential threats.

Thank you for attention!