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GLOBALIZATION AS A CHALLENGE FOR PROFESSIONAL DEVELOPMENT: INTERNATIONAL APPROACHES AND EDUCATIONAL TRENDS

Globalization is reshaping the landscape of professional education and influencing the formation of specialists across the globe. The ongoing transformation of labor markets, the emergence of transnational professions, and the growing demand for flexible and mobile professionals require a reconsideration of educational priorities and practices. This paper explores how globalization challenges traditional professional trajectories and what strategies are being implemented internationally to foster adaptive, future-ready professionals.

According to Mydłowska, the development of knowledge-based economies and the emergence of new interdisciplinary professions call for a shift from conventional qualification models to competency-oriented education. Lifelong learning, digital literacy, and soft skills become essential for specialists operating in volatile, uncertain, complex, and ambiguous (VUCA) environments. Countries such as Finland, Germany, and Switzerland have demonstrated successful implementation of dual education systems, which integrate academic and practical training and reflect the realities of the labor market (Mydłowska, 2020).

In parallel, the OECD emphasizes megatrends that influence education globally. These include mobility, urbanization, technological progress, and social shifts. The report highlights the need for systems that support continuous learning, promote global citizenship, and adapt to rapid changes through innovation and cross-cultural collaboration. Education must respond to the demands of digital transformation, sustainability, and resilience (OECD, 2024).

Rashid and Thomas outline practical strategies for fostering inclusive and culturally competent workforces through human resource development, linking cross-

cultural awareness directly to employability and professional advancement. Their study emphasizes the role of education in developing global professional identity and highlights the importance of diversity training in professional development (Rashid & Thomas, 2024).

In the Ukrainian context, aligning educational strategies with global trends is crucial for preparing competitive professionals capable of integrating into international professional environments. The research suggests that modernization of curricula, inclusion of global competencies, and support for academic mobility should be prioritized. At the same time, many institutions—particularly in transitioning economies—still face practical limitations in adopting these strategies at scale, which underscores the importance of context-sensitive reforms.

This is supported by Onyshchenko (2021), who identifies major trends in the professional training of future educators across Europe, including emphasis on multilingualism, interdisciplinary approaches, and international academic exchange. The study highlights best practices from countries such as the Netherlands, Greece, and Slovakia, which have adopted innovative educational standards and mobility schemes aligned with global trends (Onyshchenko, 2021). These findings particularly resonate with my own observations as a doctoral student navigating a rapidly evolving academic landscape, where international exposure and digital adaptability become increasingly central to professional identity formation.

Moreover, recent professional analyses highlight additional directions. For instance, Schrole (2023) emphasizes trends such as the increasing demand for hybrid learning models, the importance of emotional intelligence, and the prioritization of inclusivity and lifelong learning in international education. These dimensions illustrate how global education systems are attempting to adapt to increasingly complex realities, though their implementation remains uneven across regions (Schrole, 2023).

REFERENCES

1. OECD. (2024). Trends Shaping Education 2025. OECD Publishing. https://www.oecd.org/en/publications/trends-shaping-education-2025_ee6587fd-en.html

2. Onyshchenko, N. (2021). World Trends of Professional Training of Future Teachers in Higher Education Institutions. In Scientific developments of modern society:

Proceedings of the 6th International scientific and practical conference (March 3–5, 2021, Riga, Latvia) (pp. 189–192). ISG. https://www.researchgate.net/publication/351627669

3. Mydłowska, B. (2020). Globalization as a Challenge for Professional Education. Scientific Journal of Silesian University of Technology. Series: Organization and Management, 147, 383–393.

4. Rashid, M., & Thomas, P. (2024). Cross-cultural competence in global HRD: Strategies for developing an inclusive and diverse workforce. International Journal of Science and Research Archive, 5(3), 98–108. https://ijsra.net/sites/default/files/IJSRA-2024-0765.pdf

5. Schrole. (2023, September 5). 5 global trends in international education you should know about. Schrole Group. Retrieved from https://www.schrole.com/news/5-global-trends-in-international-education-you-should-know-about/

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APPLICATION OF ZINC NANOPARTICLES IN THE AGRICULTURAL INDUSTRY

Introduction. Zinc (Zn) is an essential trace element for plant growth and development, and also plays an important role in animal and human organisms. It is involved in the regulation of the activity and structural stability of various proteins and enzymes, acting as a catalytic, regulatory or structural cofactor for many enzymatic and regulatory proteins. In plants, Zn is required for a wide range of biochemical and physiological processes, including the regulation of gene expression, chlorophyll biosynthesis, photosynthesis, respiration, hormonal regulation, signalling and adaptation to environmental stress factors (Zeng, 2021).

ZnO nanoparticles (ZnNPs) have a wide range of applications due to their semiconducting, piezoelectric and pyroelectric properties. This is due to their large band gap and high binding energy. ZnNPs are one of the most widely used engineered nanomaterials and have significant potential for application in agriculture. They can be