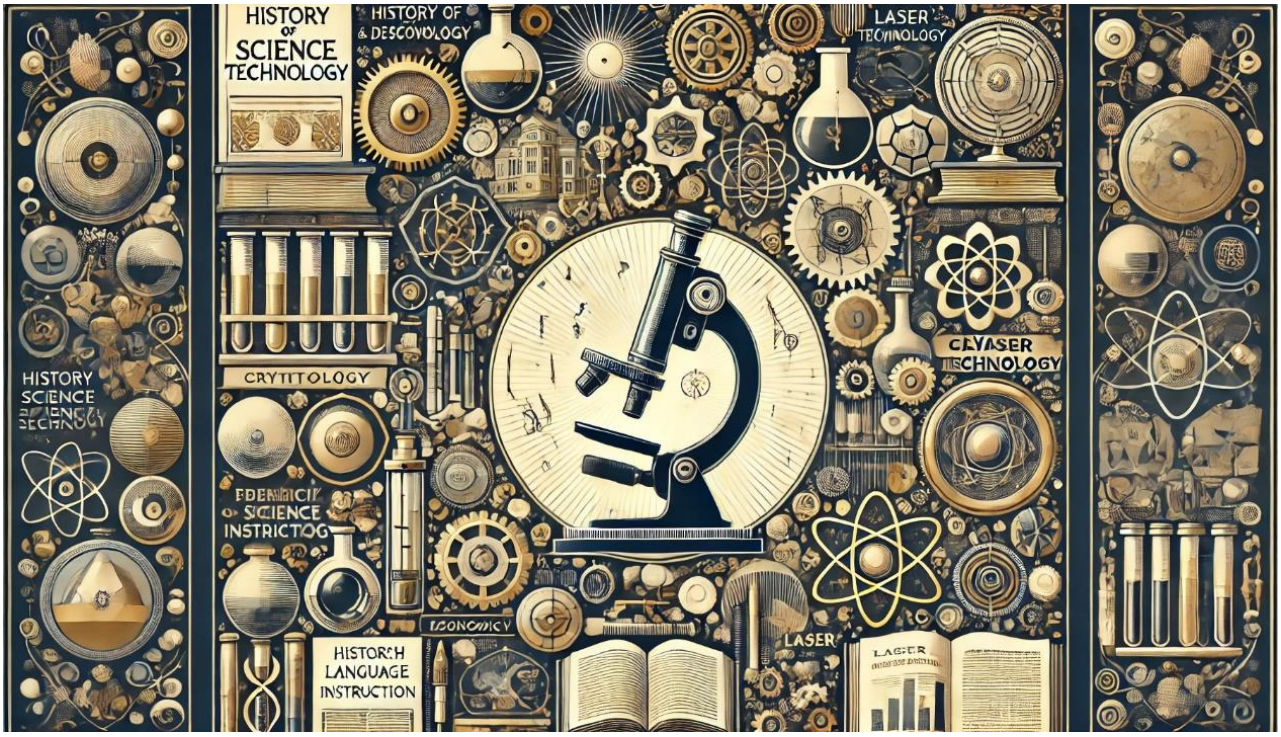

EDITORIAL

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PREFACE

This volume brings together a diverse collection of research studies, each reflecting critical inquiries into historical, scientific, cultural, and philosophical topics. The works presented here showcase the contributions of scholars who delve into the intersections of their disciplines, offering fresh perspectives and fostering a deeper understanding of the complexities of human endeavor and its implications for contemporary and future developments.

The issue begins with an article in which the author explores French language instruction in Galicia (1867–1939) and examines the pedagogical evolution from grammar-translation and text-based methods to the direct method. The study demonstrates that while the earlier period was dominated by translation-based approaches emphasizing grammar and textual analysis, the later adoption of the direct method marked a significant shift towards practical language use, particularly in speaking and writing. Through a historical-analytical approach, the authors illustrate how educational reform aligned with linguistic theories and psychological principles of the time. This transition marked a shift towards communicative competence and cultural integration, establishing a foundation for modern approaches to language teaching.

In economics, exploring planning paradigms provides an analytical framework for understanding the socio-economic processes that shaped historical and contemporary thought. The results of the next study showed the main driving force of the genesis is a change in the level of environmental stability, the degree of socio-economic processes predictability and the level of uncertainty in their future development. The study identifies three dominant paradigms – neoclassical, neo-institutional, and evolutionary – emphasizing their relevance in addressing uncertainty, environmental instability, and the interplay between theory and practice. These findings highlight the adaptability required for effective economic planning in an increasingly interconnected world.

The contributions of Ukrainian scientists to the development of the Tselinograd State Medical Institute during the 1960s offer an inspiring narrative of academic exchange and institutional growth. The authors focus on the pioneering work of Dr. Viktor Rafailovych Faitelberg-Blank and Dr. Mariia Vasilivna Kropelnitska, whose innovative approaches to medical education and research shaped scientific schools and advanced pedagogical methodologies. This study underscores the enduring impact of knowledge transfer across borders.

The investigation of natural and mathematical publications in the Dnipro region during the late 19th and early 20th centuries highlights their role in transforming teaching methodologies into a formalized science. By analyzing journals and publishing activities, the study traces the development of methodological schools and the integration of practical and experimental approaches into educational practices. This research reveals the foundations of educational technology as a distinct discipline.

The history of cryotechnology in reproductive medicine provides a compelling account of how advances in cryobiology revolutionized fertility preservation and assisted reproductive technologies. Tracing key milestones, the authors highlight how breakthroughs in cryopreservation – from sperm to oocytes and embryos – have transformed possibilities for family planning and fertility treatments. Given the critical role of cryotechnologies in modern reproductive medicine, this article delves into the historical context of these developments, exploring the key breakthroughs that have shaped this field. The authors conducted an in-depth analysis of existing literature, drawing on a wide range of scientific databases to highlight the global impact of cryobiology on the current successes in reproductive medicine. Furthermore, the article presents the results of the authors' research and practical experience in the field of reproductive cryobiology, with a particular focus on the application of these technologies in Ukraine. Ethical considerations, technological challenges, and future applications of cryotechnology are also addressed, offering a holistic view of its significance in modern healthcare.

The philosophical dimension of this volume is represented by an analysis of Karl Popper's critical rationalism. By tracing the development of Popper's ideas – from his principle of falsification in the philosophy of science to his critique of historicism and advocacy for open societies – the study demonstrates the continued relevance of his thought in addressing contemporary challenges of democracy and authoritarianism.

A historical examination of ophthalmology in the Dutch East Indies (1900–1942) focuses on the establishment of specialized medical facilities in response to prevalent eye health issues. Using archival materials and spatio-temporal analysis, the study highlights the regional expansion of ophthalmology services and their role in advancing public health. This work underscores the importance of institutional development in addressing medical challenges and promoting specialization.

Technological innovation is further explored in the development of electromagnetic torpedo tubes at the Kharkiv Electromechanical Plant (1936–1938). The provides a historical account of Soviet experimentation with electromagnetic systems for submarine torpedo launching, reflecting the challenges of integrating theoretical possibilities into practical solutions.

The next study of lasers for countering UAVs provides insight into the rapid technological evolution in defense systems. The development of unmanned aerial vehicles has prompted the need to develop alternative and innovative countermeasures. These methods may range from the usage of interceptor drones to the application of concentrated energy beams. This paper examines the progress and known uses of laser technology in the context of combating unmanned aerial vehicles. To deepen and systematize knowledge about the development of laser applications in the military field, a systematic bibliographic analysis of scientific papers and popular publications on the development of both laser technologies and unmanned aerial vehicles over the past century was conducted. The work offers a historical perspective and examines contemporary strategies for integrating laser technology into countermeasures against emerging threats.

Historiographic works on the history of cinema play an important role in preserving knowledge about the development of this art form. They not only document the key stages of the evolution of cinema but also provide an opportunity to analyze it as a cultural phenomenon that is closely intertwined with the history of mankind. Historiographic works on the history of cinema cover the study of the development of cinema as an art, a means of communication and industry. They reflect various aspects of its formation: socio-cultural influences, technological breakthroughs, genre transformations and the role of cinema in a historical context. However, a thorough analysis of historiographic sources on the study of the history of the evolution of cinema in the context of considering the stages of the development of science and technology has not been carried out before. The next study aims to investigate the state, completeness and reliability of the study of the history of the development of cinema in the context of considering the stages of the development of science and technology, based on the analysis of historiographic sources, the achievements of predecessors, and modern methodology. The objective of this article is to analyze historiographical sources that consider the magic lantern, the camera obscura, and the shadow play as key precursors to cinema.

The next article updates the most significant information about the outstanding scientist-mechanic and railwayman of the first third of the 20th century Academician of the All-Ukrainian Academy of Sciences Petro Mykhaylovych Suprunenko. It is proven that his activities in the field of railway development are a significant contribution to the development of world science and technology. The main scientific works of the scientist and engineer are devoted to important problems of transport mechanics. He paid special attention to locomotive and wagon construction (he was a wagon designer). Wagons were built on the basis of a large amount of experimental material, which at one time received significant public resonance and scientific and technical recognition. The scientist's achievements in the initial period of railway transport construction in Ukraine, especially on the South-Western Railways, are confirmed. The article shows that the role of P. M. Suprunenko was in his scientific work as an "idea generator" and a leading theorist in combination with engineering activities.

Together, these contributions reflect the richness of interdisciplinary inquiry, showcasing the interconnectedness of historical, scientific, and philosophical developments. They demonstrate how individual efforts and collective advancements contribute to shaping modern understanding across various fields.

This volume aims to inspire scholars and practitioners alike, providing a platform for dialogue and collaboration. As we face the challenges of the 21st century, the insights offered here serve as a reminder of the enduring value of inquiry, innovation, and reflection in driving progress and enriching our shared intellectual heritage.