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Introduction to Special Issue on Critical and Emergent Issues in Education: 21st-Century Skills

Guest Editor
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The world is fraught with challenges that are reinventing the wheel of education. The convergence of a volatile, uncertain, complex, ambiguous, and disruptive (VUCAD) global environment, exacerbated by the unprecedented post-COVID-19 pandemic new normal, and the fast advancements in artificial intelligence (AI) has created a perfect storm of critical and emergent issues in the field of education (Cahapay, 2020; Paje et al., 2021; Cain, 2023). Copious compelling pieces of evidence show the changing nature of learners and educational processes which have great implications for education today.

As policymakers, researchers, educators, and learners navigate these uncharted waters, it becomes increasingly unmistakable that a fundamental reevaluation of education is necessary. The current VUCAD world, shaped by shifting social, economic, moral, and technological landscapes, has made conventional models of education and other human affairs seem inadequate. The post-COVID-19 pandemic new normal, with its undoable consequence in the emerging nature of learning and profound impact, has exposed the vulnerabilities of the current educational systems around the world. The rise of AI and automation has added another layer of complexity, raising questions about the role of humans in an increasingly AI-driven world.

In response to these challenges, education stakeholders are acknowledging the need for rekindling 21st-century skills. These skills encompass a wide range of competencies, including critical thinking, creativity, communication, collaboration, problem-solving, collaboration, digital literacy, adaptability, entrepreneurship, emotional intelligence, lifelong learning, inclusivity, citizenship, civic engagement, and other emerging skills. Rather than highlighting the conventional disciplinal knowledge, they underscore a broad set of competencies that help individuals thrive in a complex and dynamic society. They empower individuals to contribute meaningfully to an ever-evolving world (Rotherham & Willingham, 2010).

Hence, this special issue aims to delve into the critical and emergent issues in education within the context of the aforementioned 21st-century skills. The articles included in this issue take a closer look into each of these facets, thematically examining the perspectives, insights, problems, challenges, solutions, and opportunities that are emerging in response to the evolving educational landscape. Through insightful research, practical examples, and expert analysis, it hopes to extend and contribute to the ongoing conversation points as follows:

Having an understanding of cultural diversity and the ability to interact with learners from diverse backgrounds is imperative in the 21st century. Thus, the two articles in this special issue touch on inclusivity in education. One of them is the article by Valentine Joseph Owan and colleagues which conceptually discusses beyond numerical representation of learning by measuring students' learning outcomes and the emergence of achievers and underachievers. The

study of Tunahan Filiz and Gönül Güneş, likewise examines the activity-based mathematics teaching to students with learning disabilities in out-of-school learning environments.

Adaptable, resilient, and flexible teachers are extremely needed in this volatile educational landscape. Numerous articles in this issue tackle these skills. The paper of Fekede Sileshi Fufa and colleagues qualitatively scrutinizes the challenges encountered by teachers in using student-centered teaching strategies in history education while Osman Bağdat and Hüseyin Bahadır Yanık's documents how beginning teachers attempted to improve instruction using five practices to maintain cognitively demanding tasks in mathematics. In addition, drawing from lesson study experiences, the paper of Oben Kanbolat offers data of the potential of skill-based problems in mathematics classes. On a more reflective approach, the research of Mulualem Eshete Mekie and Girma Gezahegn EFL looks into the reflections and target needs of teachers' continuous professional development and Sabiha Dulay's uncovers teachers' perceptions of effective teachers and understand effective teaching practices.

Digital tools and technologies are an important tool in today's digitally-mediated teaching and learning environment. Three articles set in the context of pre-service teacher education in this special issue look into this matter. The paper of Ruhşen Aldemir Engin determines the effect of designing educational digital games while Ayşegül Aslan and Duygu Arabacı's explores the use of Thinglink Web 2.0 Tool in out-of-school learning environments in mathematics. Relevant to extolling digital literacy as a crucial skill of teachers, the article of Emre Dağaşan probes the digital literacy of teachers levels in terms of various variables.

Analyzing information and evaluating situations in the context of ever-dynamic education and the global community is necessary for developing evidence-based and data-driven decisions. These 21st-century skills are reflected in the special issue articles of Evren Erzen and Hüseyin Öztürk which analyzes the theme of death in preschool books and of Büşra Ergin and Esra Ergin's which investigates the readability of information texts on the internet regarding family participation. Similarly, the article of Hakan Sarıtiken evaluates the situation in multicultural schools focusing on the problems from the perspective of school administrators.

A more granular approach relative to analyzing information is analyzing the effects, correlations, and differences involving various constructs. The paper of Pınar Özdemir assesses the effects of gender, personal dynamics, and actor-partner effect on Turkish couples' division of household labor while Furkan Demir's correlates mathematics literacy and high school entrance exam results of students. On the other hand, evidence is presented by the article of Handan Demircioğlu and Emine Nur Ünveren Bilgiç on the relationship between pre-service teachers' attitudes towards uncertainty, probability, and its teaching. Also, the study of Ahmad Dzulfikar and Tatang Herman compares the mathematical problem-solving skills between students based on their basic mathematics knowledge and cognitive style.

It is inevitable for educators to adapt to new situations, but to be open to change, there is a need to learn from past data and experiences too. Two articles address this theme in this special issue. The scholarly work of Kadir Gürsoy and colleagues reports a meta-analysis study to gather evidence on the effect of STEM education practices on academic achievement and scientific process skills. Whereas, Tuğba Baran Kaya attempts to relate geometry teaching from the narrative of one of the most important figures who wrote about geometry and today's practice in the field.

Other emerging relevant concepts in support of 21st-century skills deserve a platform in the conversation. Thus, for instance, the article of Fulya Ezmeci conceptually talks about how play contributes to brain growth and development. Of equal interest, the research of Thomas G. Ryan further offers forceful proof on the contribution of recess to the communication skills of children

with others, individuality, and group cohesion.

The rapidly evolving global landscape, exacerbated by many factors, has presented significant challenges to the field of education. Traditional education models are proving inadequate in this dynamic environment, necessitating a fundamental reevaluation of education. The emergence of 21st-century skills, such as critical thinking, innovation, resilience, adaptability, digital literacy, information literacy, and inclusivity, among others, has become a must for both educators and learners.

This special issue has sought to explore these critical issues within the context of 21st-century skills. The included articles have delved deep into various aspects, addressing inclusivity in education, the need for adaptable teachers, the role of digital tools, data-driven decision-making, and the importance of learning from experiences. Education must adapt to meet the demands of the ever-changing world, and this collection of insights from contributing authors around the world aims to contribute to that ongoing dialogue.

As we explore the present forward, it is fundamental that we continue to acknowledge the evolving nature of teaching, learning and other human affairs and equip ourselves with the necessary skills to thrive in a complex and dynamic society. By relearning 21st-century skills, we empower ourselves and future generations to navigate this uncertain educational landscape and make meaningful contributions to education and the world.

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