

## Interdisciplinary Insights in Educational Research: A Comprehensive Review of Digital Pedagogy, Scale Development, Cognitive Studies, and Global Comparisons in e-KJER's August 2025 Issue

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Editorial article

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### Abstract

This editorial introduces the second issue of the twelfth volume of e-KJER, which presents a diverse collection of 18 studies offering significant contributions to the field of educational sciences at both national and international levels. The issue features research from the United States, France, Kyrgyzstan, Nigeria, and Türkiye, strengthening the journal's international character. The compiled articles comprehensively address current educational trends, pedagogical approaches, and the use of digital technologies. The studies employ a variety of methodological approaches, including phenomenographic analysis, scale adaptation and development, experimental designs, correlational research, and bibliometric analysis. Key findings across the manuscripts highlight the transformative potential of augmented and virtual reality in language education, the critical importance of student engagement in online learning environments, and the complex relationships between digital addiction, stress coping mechanisms, and academic skills. Furthermore, the issue includes significant research on validating assessment tools, exploring cognitive processes in special education, and analyzing large-scale international assessment data like TIMSS and ICILS to inform educational policy and practice. Collectively, the articles in this issue provide valuable insights and robust tools for researchers and practitioners, contributing to the advancement of educational research and its applications. The editorial also reiterates the journal's submission guidelines, emphasizing the structure of the abstract, anonymization for a blind peer-review process, and recommendations regarding manuscript length to ensure a fair and efficient evaluation process.

**Keywords:** Educational research, digital learning, educational technology, pedagogy, international studies.

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## **Introduction**

The field of educational sciences is undergoing a dynamic evolution, driven by global digital transformation, pedagogical innovations, and changing student profiles. This process compels researchers and practitioners to ask new questions that transcend traditional boundaries and to develop novel methodological approaches. Particularly, the integration of technologies such as artificial intelligence, virtual reality, and augmented reality into educational environments is reshaping teaching and learning processes, while simultaneously introducing new challenges like the digital divide, cyberbullying, and technology addiction. Within this complex and multidimensional landscape, the role of educational research has evolved beyond merely describing phenomena to generating evidence-based solutions and guiding sustainable education policies.

The 2025, Volume 12, Issue 2 of e-KJER brings together 18 high-quality studies aiming to contribute to current debates in the field of educational sciences, reflecting this transformation and interdisciplinary dialogue. Enriched by contributions from researchers in five different countries, this issue seeks to mirror the universal language of educational research and its unique reflections within local contexts. The primary aim of this issue is to inform readers about the various themes addressed, highlight the common points of the studies, and establish the position and significance of this special issue within the existing literature.

In this context, the studies featured in this issue can be grouped around four main thematic axes: (a) the impact of digital technologies on learning processes and academic skills, (b) methodological contributions to educational research through scale adaptation and development studies, (c) in-depth analyses concerning special education and cognitive processes, and (d) a general evaluation of the Turkish education system in light of international comparative studies. This editorial will outline these thematic axes and briefly touch upon the potential contribution of each study to the field. Our ultimate goal is to provide readers with a summary of this comprehensive collection and to frame this issue, which we believe will be a valuable resource for anyone interested in education.

## **Method**

### **Research Model**

This editorial employs a qualitative documentary analysis design to present a comprehensive thematic overview of the 18 studies featured in this issue. The analysis is not based on primary data collection but rather on a systematic synthesis of the methodologies, findings, and contributions of each constituent article. This approach allows for the identification of emergent themes, methodological trends, and collective contributions to the field of educational sciences, providing a holistic perspective on the current research landscape.

### **Document list**

The "document list" for this editorial analysis consists of the entirety of the research manuscripts published in the 12th Volume, 2nd Issue of e-KJER (N=18). The document list was selected through a purposive sampling method, as all studies meeting the journal's peer-review and publication criteria within the specified issue frame were included to ensure a complete representation of the issue's content. The studies themselves encompass diverse participant groups, including university students, pre-service teachers, secondary school students, and children with special educational needs, with sample sizes ranging from singular case studies to large-scale international assessments.

### **Data Collection Tools**

The "data" for this editorial synthesis were the full-text manuscripts of the 18 published articles. A structured analysis matrix was created to systematically extract and record key information from each study. This matrix included fields for: (a) research objectives and questions, (b) methodological design (e.g., quantitative, qualitative, mixed-methods), (c) data collection instruments (e.g., scales, tests,

interview protocols), (d) sample characteristics, (e) key findings, and (f) stated contributions to the literature.

### **Validity and Reliability**

To ensure the trustworthiness and accuracy of the editorial synthesis, several strategies were employed. The analysis matrix was pilot-tested on several articles to refine the categories. The extraction and thematic categorization of data were conducted independently by the editor and an assistant to establish inter-coder reliability. Any discrepancies in thematic assignment were discussed until a consensus was reached, thereby enhancing the internal validity of the thematic analysis.

### **Data Collection Techniques**

The data collection process involved a meticulous review of each accepted manuscript prior to publication. This was an iterative process that included cross-referencing the methodology, results, and discussion sections of each paper to ensure an accurate representation of the study's design and outcomes in this editorial.

### **Data Analysis**

The extracted data were analyzed through content and thematic analysis. The primary focus was on identifying recurring themes, methodological commonalities, and divergent approaches across the collected studies. The findings were then synthesized to construct a coherent narrative that highlights the collective significance of the research presented in this issue, moving from descriptive summaries to an interpretive discussion of their broader implications for the field.

## **Findings**

The qualitative findings obtained from the studies in this issue have been summarized under four thematic axes, with each theme explained in depth through the contributions of the relevant **research**.

### **1. The Impact of Digital Technologies on Learning Processes and Academic Skills**

Studies under this theme have revealed the dual nature of technology in education. On one hand, the study by İnalöz and Yılmaz (2025) demonstrated that augmented and virtual reality applications are effective in enhancing students' four core language skills in foreign language teaching. On the other hand, Kaman and Bulut (2025) found that digital game addiction has negative effects on reading motivation and comprehension skills. The study by Evgin, Karabulut, Deniz, and Kaçmaz (2025) revealed that problematic internet use weakens coping mechanisms for stress, while Kurtça (2025) determined that digital hoarding behavior exhibits a positive correlation with loss of control beliefs. Şat's (2025) research indicates that the negative effects of cyber ostracism can be partially compensated through virtual sharing. Lastly, Batı and Irmak (2025) emphasized that professional collaboration and self-efficacy beliefs are determining factors in teachers' technology use.

### **2. Methodological Contribution Through Scale Adaptation and Development Studies**

This theme has provided valuable contributions to strengthening the measurement capacity of educational research. Yıldız, Yılmaz, and Horzum (2025) confirmed that the scale adapted into Turkish for measuring student engagement in online learning environments is reliable and valid. Balıkçı and Alpsülün (2025) verified that the Turkish adaptation of the Artificial Intelligence Attitude Scale-4 (AIAS-4) is a valid measurement tool. Kırmızıoğlu and Dinçer (2025) developed an instructional evaluation scale for secondary school students, while Seçim and Yıldız (2025) contributed to the literature with the Metacognition Proficiency Scale (MEPS) designed to measure preschool educators' metacognitive competencies.

### **3. In-Depth Analyses on Special Education and Cognitive Processes**

Studies under this theme have focused on the neurocognitive foundations of special education. The comparative research by Toker and Acarlar (2025) revealed differences in the cognitive profiles of

children with autism spectrum disorder and typically developing children. By examining the complex relationship between Theory of Mind (ToM) and executive functions, the study provides a theoretical foundation for intervention strategies in special education.

#### 4. International Comparisons and Evaluation of the Turkish Education System

Studies in this axis have evaluated educational outcomes at national and international levels, offering evidence-based recommendations for policymakers. Suna and Özer (2025), in their analysis based on TIMSS 2023 data, emphasized the persistent strong determinative influence of socioeconomic factors on Turkey's performance despite improvements. Kalemkuş (2025) analyzed 25-year trends in technology use in primary school science education, while Alordiah (2025) examined formative assessment practices in Nigeria. Genç and Aksoy (2025) experimentally demonstrated the effectiveness of concept cartoons in eliminating misconceptions, and Püren and Mirici (2025) investigated student perceptions regarding the use of the European Language Portfolio as a self-assessment tool. Finally, Yılmaz Aslan, Özmentar, and Kuşdemir Kayıran (2025) analyzed assessment approaches in mathematics method courses.

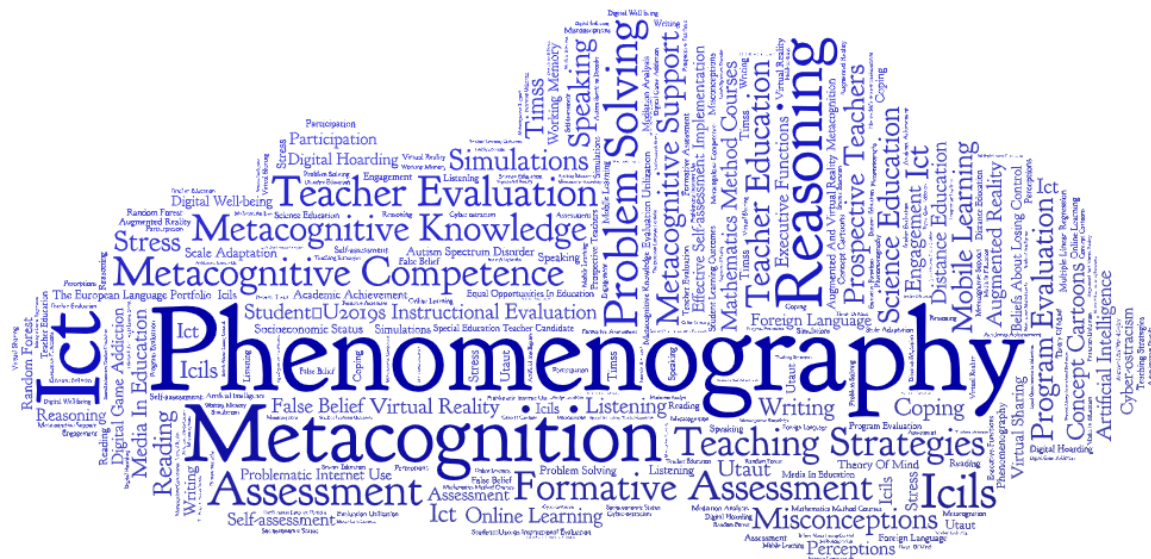


Figure 1. Keywords in the August 2025 issue of e-KJER

A thematic analysis of the keywords from the studies published in the August 2025 issue of e-KJER reveals several prominent and interconnected research trends in the field of educational sciences. This analysis highlights the current priorities and evolving focus areas among researchers (See Figure 1).

**Dominance of Digital Transformation and Technology Integration:** The most prominent cluster of keywords revolves around the digital transformation of education. Terms like Augmented reality, virtual reality, Online learning, distance education, ICT, mobile learning, and simulations indicate a strong research focus on how immersive and digital technologies are reshaping teaching and learning environments. This is further reinforced by studies on digital game addiction, problematic internet use, and digital hoarding, demonstrating a balanced concern for both the opportunities and challenges posed by technology integration. The keyword UTAUT (Unified Theory of Acceptance and Use of Technology) explicitly points to research investigating the factors influencing technology adoption among educators and students.

**Focus on Assessment, Methodology, and Validation:** A significant methodological trend is evident in keywords such as scale adaptation, Evaluation utilization, program evaluation, and self-assessment. This reflects the field's growing sophistication and emphasis on developing robust, validated instruments to measure complex educational constructs like engagement, metacognition, attitude, and Reading comprehension. The presence of Phenomenography and mediation analysis further

indicates a commitment to diverse and rigorous research methodologies, both qualitative and quantitative.

**Deepening Interest in Cognitive and Psychological Processes:** Research into the underlying cognitive mechanisms of learning is well-represented. Keywords like Theory of Mind, Executive Functions, Working Memory, reasoning, problem solving, and Metacognition show an effort to bridge educational practice with cognitive science and psychology. This is particularly applied in understanding Autism Spectrum Disorder and in fostering higher-order thinking skills across different subjects.

**Subject-Specific Pedagogical Innovations** The keywords highlight innovations within specific disciplines:

- Physics education and Science Education: Focused on reasoning and addressing Misconceptions through tools like Concept Cartoons.
- Foreign language teaching: Leveraging Augmented reality and virtual reality to enhance speaking, writing, reading, and listening skills.

**Equity, Policy, and Teacher Development:** A macro-level perspective is present through keywords concerned with system-wide issues. TIMSS, socioeconomic status, and equal opportunities in education point to research aimed at informing policy and addressing achievement gaps. Concurrently, studies on teacher educators, prospective teachers, and teacher evaluation underscore the critical role of teacher preparation and professional development in enacting educational change, especially in contexts with resource constraints.

## Discussion

The findings of the studies in this issue collectively paint a complex and nuanced picture of the contemporary educational landscape, primarily driven by digital transformation. The first theme confirms the dualistic nature of technology in education, acting as both a powerful enabler and a potential disruptor. The significant positive outcomes of AR/VR applications in language learning (İnalöz & Yılmaz, 2025) align with constructivist learning theories, demonstrating that immersive, contextual experiences enhance knowledge retention and skill acquisition. However, the negative correlations between digital addiction, reading motivation, and coping skills (Kaman & Bulut, 2025; Evgin et al., 2025) underscore the critical need for digital literacy and well-being programs alongside technological integration. This dichotomy suggests that technology itself is not a panacea; its impact is profoundly shaped by pedagogical design and user behaviour.

The second theme highlights a crucial methodological advancement for the field. The successful adaptation and validation of several key scales (Yıldız et al., 2025; Balıkçı & Alpsülün, 2025; Kırmızıoğlu & Dinçer, 2025; Seçim & Yıldız, 2025) provide Turkish researchers with robust, culturally relevant instruments. This addresses a significant gap in the literature and enables more precise and comparable measurements of complex constructs like online engagement, AI attitudes, and metacognitive proficiency in future studies.

The third theme, focusing on special education, offers a deeper, cognitive-level understanding of differences between neurotypical children and those with ASD. The work of Toker and Acarlar (2025) moves beyond behavioural observations to explore the underlying cognitive mechanisms (ToM and executive functions), providing a stronger theoretical foundation for developing targeted interventions that address root causes rather than just symptoms.

Finally, the macro-level analyses presented in the fourth theme provide invaluable evidence for policy formulation. The persistent strong influence of socioeconomic factors on achievement in Türkiye (Suna & Özer, 2025) is a critical reminder that technological and pedagogical innovations must be coupled with equity-focused policies to be truly effective. The international perspective from Nigeria

(Alordiah, 2025) further emphasizes that resource constraints are a universal challenge, but effective pedagogical strategies like formative assessment can still yield positive outcomes.

## Conclusion

In conclusion, the diverse research presented in this issue of e-KJER converges on a central idea: the future of education lies in a balanced, evidence-based, and human-centric approach to innovation. The findings unequivocally show that while digital technologies like AR, VR, and AI offer transformative potential for personalizing learning and enhancing engagement, their success is contingent upon effective pedagogical integration and a strong focus on mitigating associated risks like digital addiction and inequality. The studies on scale development strengthen the methodological backbone of educational research in Türkiye, allowing for more rigorous inquiry. Meanwhile, the insights into cognitive processes and the stark evidence from large-scale assessments provide a clear directive for policymakers: investing in teacher capacity (Batı & Irmak, 2025), addressing socioeconomic disparities, and promoting digital citizenship are not optional extras but essential components of a modern, effective, and equitable education system.

## Suggestions

Based on the compelling evidence gathered in this issue, the following suggestions are offered:

### For Practitioners (Teachers and Instructional Designers):

1. **Integrate Immersive Technologies Pedagogically:** Move beyond technical use of AR/VR and intentionally design learning activities that leverage their strengths for contextual and experiential learning, as demonstrated by İnalöz and Yılmaz (2025).
2. **Prioritize Digital Well-being:** Actively incorporate digital citizenship education into the curriculum to help students develop healthy digital habits, recognize signs of problematic use, and build effective coping strategies to mitigate the risks identified by Kaman and Bulut (2025) and Evgin et al. (2025).
3. **Utilize New Assessment Tools:** Adopt the newly validated scales on student engagement and instructional evaluation to gain deeper, data-driven insights into learning processes and teaching effectiveness.

### For Policymakers and Educational Administrators:

1. **Address the Digital Divide:** Develop and fund policies that ensure equitable access to technology and high-quality digital content, directly tackling the socioeconomic achievement gap highlighted by Suna and Özer (2025).
2. **Invest in Teacher Professional Development:** Design sustained professional learning programs focused on developing teachers' digital pedagogical skills, self-efficacy, and collaborative practices, which are key drivers of successful technology integration (Batı & Irmak, 2025).
3. **Support Inclusive Education:** Allocate resources for training and tools that help educators implement strategies supported by research on cognitive processes (Toker & Acarlar, 2025) to better support students with special needs.

### For Future Researchers:

1. **Conduct Longitudinal Studies:** Investigate the long-term effects of immersive technologies and digital addiction on academic achievement and psychological well-being, moving beyond cross-sectional and short-term experimental designs.
2. **Explore Causal Relationships:** Design experimental studies to further probe the causal mechanisms behind the relationships found in this issue, such as how specific coping strategies can most effectively reduce problematic internet use.

3. **Expand the Scope of Research:** Utilize the newly adapted and developed scales in different contexts and with larger samples to further validate their generalizability and explore new correlations.
4. **Investigate Intervention Strategies:** Develop and test the effectiveness of specific intervention programs aimed at reducing digital hoarding, mitigating cyber ostracism, and enhancing metacognitive skills among both students and educators.

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