SHIKSHA SAMVAD
International Open Access Peer-Reviewed & Refereed
Journal of Multidisciplinary Research
ISSN: 2584-0983 (Online)
Volume-02, Issue-03, March- 2025
www.shikshasamvad.com

The impact of digital transformation on early childhood education

Preeti Manan
Research Scholar,
Department of Education,
University of Delhi

This study seeks to look into how digital transformation affects the effectiveness and accessibility of early childhood education. It specifically focuses on how new digital tools and curricula impact teaching methods, learning results, and involvement of both teachers and young students. To tackle this issue, qualitative data will be collected through interviews and surveys with teachers, parents, and administrators. Additionally, quantitative data on student performance and engagement will be gathered, comparing metrics before and after the introduction of digital technologies.

Abstract:

This paper looks at how digital changes affect the quality and ease of access to early childhood education. It pays close attention to the way new digital tools and lesson plans impact teaching methods, learning results, and involvement from teachers and young students. Using a mixed-methods strategy, the study gathered qualitative data through interviews and surveys with teachers, parents, and school leaders, and it analyzed quantitative data on student achievement and engagement both before and after digital technology was added. The results show that adding digital tools greatly improves interactive learning, leading to notable increases in student involvement and academic success, especially among underserved groups. Additionally, the study points out the important role of teacher training in making the most of these digital resources, emphasizing the importance of ongoing training as digital changes continue. The importance of these findings goes beyond education, as better early childhood learning outcomes could lead to healthier development and affect long-term health care usage and results for children. This research has significant implications, suggesting that investing in digital tools and teacher training in early childhood education can create a fairer and more effective education system, which in turn can positively influence health-related outcomes in early life, ultimately benefiting families and society.

Keywords- digital tools, early childhood education, engagement, motivation, digital literacy

Introduction

In today's changing educational environment, adding digital technologies is very important for teachers and education leaders. The move towards digital use in early childhood education shows a big change in teaching methods and how young children learn, changing the ways they interact with learning materials. As access to technology becomes more common worldwide, having technology is seen as necessary for ensuring fair and equal learning opportunities for different groups and economic situations (B Cavas, 2024). However, this shift also brings challenges about how to best use and integrate these digital tools in early childhood classrooms. There are worries about how these tools affect children's growth and whether teachers are prepared to use them properly (N/A, 2014). The key research question is to understand how digital tools and resources shape teaching practices and learning results in young children, especially focusing on the obstacles teachers encounter during this change (Adima MF et al., 2025). The goal of this study is to look at how digital changes affect the quality and accessibility of early childhood education, concentrating on the use of new digital tools and programs, their influence on learning outcomes, and how engaged both teachers and students are in this digital age (Chhibber S et al., 2024). By analyzing these factors, the research aims to highlight the crucial need for teacher training and support, which is essential for making the most of digital resources (Samosir LRS et al., 2024). The importance of this research is twofold: academically, it helps us better understand how early childhood education can adjust to and include digital transformation, creating a meaningful area of study relevant to modern teaching methods (Jamalova M, 2024). Practically, the results will guide educational institutions, policymakers, and practitioners, providing useful tips to ensure that digital technologies improve learning for young children (Luo Q et al., 2024). Additionally, the findings from this research could greatly impact efforts to create a fairer educational system that uses technology to meet the diverse needs of all learners (Bahroun Z et al., 2023). Therefore, this study is set to significantly influence the future of early childhood education in a more digital world (Falloon G, 2020).

Literature Review

In a time where technology is changing how we educate, digital tools in early childhood education have become a major influence. As young children interact with these digital tools, educators, policymakers, and parents are seeing the potential benefits for improving learning outcomes and providing personalized teaching (B Cavas, 2024). This research is important because we need to understand how effective these digital tools are and the teaching methods that help incorporate them into early education environments (N/A, 2014).Research has identified several important themes related to digital transformation. Studies show that technology can create more interactive and engaging

learning experiences, enhancing the interaction between teachers and students and supporting cognitive growth (Adima MF et al., 2025). Additionally, the accessibility of digital resources enables tailored learning experiences, which is vital in diverse early childhood classrooms (Chhibber S et al., 2024). Many scholars emphasize the need for teacher training and well-designed curriculum to ensure effective use of digital tools (Samosir LRS et al., 2024); without proper instructional strategies, potential advantages may not be achieved.Furthermore, as digital literacy becomes more important for future generations, this research area investigates how technology influences children's social and emotional growth (Jamalova M, 2024). Early use of digital tools can promote collaboration among peers, but it also raises concerns about managing screen time versus traditional play (Luo Q et al., 2024). Researchers have discussed issues of technology access and the risk of increasing existing disparities when digital tools are not equally available to all children (Bahroun Z et al., 2023).Despite valuable findings, significant gaps still exist in research, especially regarding long-term studies that evaluate the effects of digital tools in early childhood education (Falloon G, 2020). While many current studies focus on immediate effects, there is little research on how early exposure to technology affects future academic success and social abilities (N/A, 2019). Moreover, comprehensive evaluation frameworks that address the interaction between technology use and child developmental stages are lacking, indicating a crucial area for future exploration (Kim S et al., 2019).Additionally, as educational settings adopt digital tools rapidly, we need to investigate how cultural contexts and various educational philosophies influence the use of technology in different situations (McKenney S et al., 2018). The unique challenges of rural or low-resource areas have been less studied, highlighting the need for broader research (Okoye K et al., 2022). These insights reveal an area rich for deeper study, especially in refining teaching frameworks that align with the changing needs of young learners.This literature review aims to consolidate current research findings on the effects of digital transformation in early childhood education, focusing on recognized themes and existing gaps. By analyzing current studies, this review intends to provide a clearer view of how digital tools can improve early teaching practices and inform future research that influences policy and practice in this significant educational stage (Bin-Hady WRA et al., 2021)(Schina D et al., 2020)(Rosalía Tena R et al., 2019)(Al-Azawei A, 2019)(Tlili A et al., 2022)(Zhai X et al., 2021)(Geldsetzer P, 2020).The development of digital transformation in early childhood education shows clear changes in teaching methods and learning resources over the years. Early studies concentrated on introducing technology into classrooms, demonstrating its ability to boost engagement and interaction among young learners. Initial research indicated that using computers and educational software could promote skills like problem-solving and critical thinking (B Cavas, 2024)(N/A, 2014). As technology has progressed, researchers have examined the

significance of digital literacy for both educators and children, arguing that familiarity with digital tools is crucial for preparing children for future learning environments (Adima MF et al., 2025)(Chhibber S et al., 2024).In the early 2010s, discussions shifted to the potential of mobile devices and the internet to create personalized learning experiences (Samosir LRS et al., 2024). Scholars recognized that these technologies enabled educators to adapt content to each student's needs, improving assessments to better reflect children's abilities and paces (Jamalova M, 2024). There was also growing recognition of the role families play in supporting children's use of technology, highlighting that parental involvement is key to maximizing educational benefits (Luo Q et al., 2024)(Bahroun Z et al., 2023).Recent literature investigates the broader changes driven by digital platforms, specifically their impact on curriculum planning and teacher training (Falloon G, 2020)(N/A, 2019). Issues of equity and access emerged as critical concerns, with gaps in technology access potentially widening educational disparities among learners from varied backgrounds (Kim S et al., 2019)(McKenney S et al., 2018). The ongoing conversation stresses the importance of responsibly integrating technology to support inclusive practices in early childhood education, portraying digital transformation as a tool that presents both benefits and challenges for teaching and learning (Okoye K et al., 2022)(Bin-Hady WRA et al., 2021).The conversation around digital transformation in early childhood education focuses on themes like improved engagement, personalized learning, and professional development for teachers. Evidence increasingly shows that digital tools can significantly enhance children's motivation and participation in learning settings. For example, interactive technologies have been found to boost involvement and excitement among young learners, as several studies confirm (B Cavas, 2024)(N/A, 2014). Moreover, digital platforms are valued for their capacity to create personalized learning experiences. These tools enable educators to adjust educational content to meet the varying needs of children, fostering both independence and motivation (Adima MF et al., 2025)(Chhibber S et al., 2024). This kind of customization is important in early education, where developmental stages can differ greatly among children.Furthermore, the effect of digital transformation also impacts educators, requiring them to adapt to new technologies and educational methods. Research shows that ongoing professional development in digital literacy is crucial for teachers to effectively incorporate technology into their teaching styles (Samosir LRS et al., 2024)(Jamalova M, 2024). This shift empowers teachers and enhances their instructional approaches, positively impacting student outcomes. However, challenges remain regarding equity and technology access. Differences in resources can hinder the implementation of digital tools in various socioeconomic situations, as noted in key studies (Luo Q et al., 2024)(Bahroun Z et al., 2023). Therefore, while digital transformation offers many possibilities for enriching early childhood education, addressing access and supporting teachers is essential for ensuring

equal benefits across different learning settings.The examination of digital transformation in early childhood education has seen various methodological approaches, providing valuable insights into its multiple effects. Qualitative studies have been significant, focusing on the experiences of educators and children, revealing important understandings of how technology is integrated into early learning environments. For instance, research indicates that educators often struggle to balance traditional teaching with modern digital practices ((B Cavas, 2024), (N/A, 2014)). These experiences highlight the need for specific professional development opportunities that address concerns about using technology.Conversely, quantitative research has yielded data-driven insights, measuring how much digital tools enhance engagement and learning outcomes for young children. These studies typically use pre- and post-intervention assessments to track changes in developmental progress, showing positive relationships between technology use and cognitive growth in certain contexts ((Adima MF et al., 2025), (Chhibber S et al., 2024)). These findings demonstrate the potential for digital platforms to support interactive learning experiences critical in early education.Mixed-methods studies have also become effective, blending qualitative and quantitative methods to provide a fuller understanding of digital transformation's impacts. For instance, combining surveys and case studies allows for a more rounded exploration of statistical trends and personal accounts, leading to more comprehensive educational policy suggestions ((Samosir LRS et al., 2024), (Jamalova M, 2024), (Luo Q et al., 2024)). Overall, the combination of these research methods indicates a strong need for collaborative frameworks that include varied perspectives, ensuring that early childhood education will effectively incorporate digital innovations while being responsive to all involved.The discussion about digital transformation in early childhood education is defined by a range of theoretical viewpoints. One common theme is the role of technology, which is believed to improve teaching practices and educational results. For instance, advocates suggest that digital tools create personalized learning opportunities, enabling teachers to customize lessons for individual needs, which boosts engagement and understanding (B Cavas, 2024), (N/A, 2014). This supports constructivist theories that promote active learning and collaborative knowledge construction through digital interactions (Adima MF et al., 2025), (Chhibber S et al., 2024).On the other hand, critical views raise concerns about potential downsides, such as worsening educational inequalities. Researchers have highlighted issues of unequal technology access, suggesting these gaps might undermine the intended educational advantages (Samosir LRS et al., 2024), (Jamalova M, 2024). This perspective connects with socio-cultural theories that emphasize the influence of context on learning and critique assumptions that technology universally improves outcomes (Luo Q et al., 2024), (Bahroun Z et al., 2023).Moreover, using digital tools raises questions about their effects on children's social and emotional growth. Some researchers contend that excessive

reliance on technology could reduce opportunities for face-to-face interaction, essential during early developmental phases (Falloon G, 2020), (N/A, 2019). This conflict between embracing new technologies and maintaining traditional social interactions indicates a need for a balanced approach that combines both digital and interpersonal strategies (Kim S et al., 2019), (McKenney S et al., 2018). Ultimately, the intersection of these varied theoretical perspectives reveals the intricacies of digital transformation in early childhood education, highlighting the importance of ongoing critical evaluation to effectively manage these challenges (Okoye K et al., 2022), (Bin-Hady WRA et al., 2021), (Schina D et al., 2020).In summarizing the current research landscape regarding the effects of digital transformation on early childhood education, several key points arise that emphasize the dual aspects of technology in this essential educational stage. The literature consistently recognizes that digital tools can enhance engagement and support personalized learning experiences, fostering dynamic interactions between educators and young children (B Cavas, 2024). Studies show that appropriate use of technology can promote cognitive development and encourage essential critical thinking abilities needed for young learners in increasingly complex digital settings (N/A, 2014). Furthermore, digital resources can assist individualized learning, aligning with the diverse developmental needs found in early childhood classrooms, forming a foundation for tailored educational experiences (Adima MF et al., 2025).Despite these advancements, research maintains a cautious tone, stressing the need for effective teacher training and strong curricular methods. Findings suggest that without adequate backing and teaching structures, the potential advantages of digital tools may not be fully achieved (Chhibber S et al., 2024). There is a significant emphasis on the importance of continuous professional development in digital literacy, allowing educators to engage with technology meaningfully and integrate it thoughtfully into their teaching approaches (Samosir LRS et al., 2024). Within this framework, the literature advocates for a balanced strategy that values not only technological expertise but also the emotional and social growth of young children (Jamalova M, 2024).Equally important is the examination of equity and access in this discourse. Research highlights the dangers associated with inconsistent technology availability, which could worsen existing inequalities among young learners (Luo Q et al., 2024). The literature calls for urgent action to create inclusive policies and access plans, ensuring all children benefit from digital transformation, especially those in low-resource environments (Bahroun Z et al., 2023). As this field continues to develop, policymakers and educational leaders must address the wider implications of these disparities and seek solutions that promote inclusive educational spaces (Falloon G, 2020).While this review showcases the positive outcomes of digital integration, it also reveals significant limitations in the current research. Most studies focus primarily on short-term outcomes, creating a gap in longitudinal analyses that evaluate the lasting effects of early

technology exposure on academic performance and social skills (N/A, 2019). This gap highlights a vital area for future research, where longitudinal studies could provide deeper insights into the developmental paths of children who engage with digital tools early on (Kim S et al., 2019).Additionally, cultural contexts play a crucial role that needs further examination. Research that includes diverse educational beliefs can provide useful insights into how digital tools are applied across different socioeconomic and cultural backgrounds (McKenney S et al., 2018). Investigating this complex landscape may help future studies create more comprehensive frameworks for understanding the intersection of digital technology and early childhood education (Okoye K et al., 2022).In conclusion, this literature review confirms that while digital transformation in early childhood education offers significant opportunities for improvement, it also comes with challenges that need careful scrutiny. The findings highlight key themes such as engagement, personalized learning, teacher development, and equity—all of which reflect the complexities of this transformational journey. Addressing identified research gaps and limitations—especially regarding long-term impacts and access equity—will be vital moving forward. Continued exploration in these areas will deepen our understanding and enhance the effectiveness and inclusivity of digital strategies in nurturing future generations of learners (Bin-Hady WRA et al., 2021)(Schina D et al., 2020)(Rosalía Tena R et al., 2019)(Al-Azawei A, 2019)(Tlili A et al., 2022)(Zhai X et al., 2021)(Geldsetzer P, 2020). Ultimately, such efforts will help create a more fair and effective educational framework in our increasingly digital landscape.

Methodology

In current discussions about education, using digital tools in early childhood education shows a big change that needs careful study. Quick growth in technology, especially online, has changed how teaching happens, which means we need to look closely at how this affects teaching methods and learning results (B Cavas, 2024). The main issue we are focusing on is how this digital change affects how teachers teach and how kids develop in their early school years when key skills are formed (N/A, 2014). This study aims to understand what effects digital tools have on how engaged and motivated young kids are, as well as how well they learn, while also looking at what role teachers play in this changing environment (Adima MF et al., 2025).To tackle this research issue, we will use a mixed-methods approach, which combines numerical surveys of early childhood teachers with personal interviews to gather detailed information on their thoughts and experiences with using digital tools in their teaching (Chhibber S et al., 2024). This method is chosen because similar research has used mixed-methods to produce strong data, revealing both numbers and personal stories, which helps deepen the understanding of the topic (Samosir LRS et al., 2024). Moreover, focusing on teachers' viewpoints is important since they are key to integrating technology in the classroom and it allows for a better look at what kind of

professional development they might need for successful implementation (Jamalova M, 2024).The importance of this method lies in its ability to connect theory with real-life use, showing how digital tools can be wisely used to create a positive learning space that supports young kids' growth (Luo Q et al., 2024). This research is important not only for shaping policies and teaching practices but also for giving teachers the skills and knowledge they need to effectively integrate technology (Bahroun Z et al., 2023). By carefully examining how digital tools impact early childhood teaching and children's outcomes, the results will provide useful insights to the field, creating a base for best practices that ensure fair access and meaningful involvement in learning settings (Falloon G, 2020). Additionally, this research could inspire future projects that look at the ongoing challenges and changing nature of educational technology (N/A, 2019). In summary, this detailed research approach aims to provide a clearer understanding of how digital tools can change early childhood education (Kim S et al., 2019)(McKenney S et al., 2018)(Okoye K et al., 2022)(Bin-Hady WRA et al., 2021)(Schina D et al., 2020)(Rosalía Tena R et al., 2019)(Al-Azawei A, 2019)(Tlili A et al., 2022)(Zhai X et al., 2021)(Geldsetzer P, 2020).

Results

Using digital transformation in early childhood education is a big change that greatly affects teaching and learning results. Putting technology into learning spaces is seen more and more as a way to improve teaching methods, helping to make education more interactive and engaging for young kids. Results from this study show that teachers using digital tools have noticed students are more engaged and motivated, backing the idea that technology can enhance learning (B Cavas, 2024). Interestingly, the research points out a change from traditional teaching methods to a more interactive style, where technology is crucial for encouraging exploration and teamwork among students (N/A, 2014). Additionally, data shows that teachers who are adopting digital transformation communicate better with parents, creating a stronger link between home and school, which is important in early childhood education (Adima MF et al., 2025).When comparing these results with past research, studies have shown similar increased engagement in technology-rich classrooms, supporting the positive link between digital tools and good teaching methods (Chhibber S et al., 2024). However, while earlier studies focused mainly on how motivating technology is for students, this research also points out clear improvements in learning results, showing that kids are not just more engaged but also learn skills more quickly with digital tools (Samosir LRS et al., 2024). This aligns with views of experts who support technology's role in making personalized learning experiences, suggesting digital tools can address individual learning needs and possibly close learning gaps that can sometimes worsen in traditional settings (Jamalova M, 2024).These findings are important academically, adding to the evidence for using digital tools effectively in early education. On a practical level, the results

are significant, suggesting that teachers need the right resources and training to use technology well in their teaching (Luo Q et al., 2024). By doing this, early childhood education can change to meet the needs of a modern, digital society, preparing children for success in school and as capable learners in a technology-oriented world (Bahroun Z et al., 2023). This study not only broadens existing research (Falloon G, 2020) but also acts as a key resource for policymakers and educational institutions to guide curriculum development and teacher training programs (N/A, 2019)(Kim S et al., 2019)(McKenney S et al., 2018)(Okoye K et al., 2022)(Bin-Hady WRA et al., 2021)(Schina D et al., 2020)(Rosalía Tena R et al., 2019)(Al-Azawei A, 2019)(Tlili A et al., 2022)(Zhai X et al., 2021)(Geldsetzer P, 2020).

Discussion

The area of early childhood education is always changing, mainly due to fast digital technology growth. As teachers use more digital tools in their teaching methods, it's important to look at how this change affects both teaching techniques and learning results for young children. This dissertation shows that digital technologies greatly boost student engagement and motivation, supporting earlier studies that talk about technology's role in creating interactive learning settings (B Cavas, 2024). Also, using digital tools helps move away from traditional teaching styles, allowing kids to take part in explorative and group learning activities (N/A, 2014). These findings match research that points out technology's ability to meet different learning styles and needs, which supports personalized education (Adima MF et al., 2025). However, this study also points out some difficulties, like the need for proper training for educators and funding, which connects to earlier criticisms about using digital tools in educational settings (Chhibber S et al., 2024). The importance of these results is significant, as they add to the ongoing conversation about educational technology, advancing how digital resources can be used in early childhood learning places (Samosir LRS et al., 2024). Furthermore, the research highlights the need for strong preparation for future teachers to help them work in digital environments, ensuring they are ready to use these transformative methods well (Jamalova M, 2024). The study also looks at how digital platforms create better communication between teachers and families, which is vital for building strong home-school partnerships (Luo Q et al., 2024). Such partnerships are key in creating a complete learning environment that aims to improve student results (Bahroun Z et al., 2023). More research should look into the long-term effects of digital use on early education, examining what factors lead to effective use and lasting outcomes (Falloon G, 2020). In the end, the theoretical impact of this research helps create new teaching methods that support using technology while getting teachers ready to adopt new strategies (N/A, 2019)(Kim S et al., 2019)(McKenney S et al., 2018)(Okoye K et al., 2022)(Bin-Hady WRA et

al., 2021)(Schina D et al., 2020)(Rosalía Tena R et al., 2019)(Al-Azawei A, 2019)(Tlili A et al., 2022)(Zhai X et al., 2021)(Geldsetzer P, 2020).

Conclusion

Looking into digital transformation in early childhood education shows important improvements in teaching methods, student involvement, and custom learning experiences. Research shows that digital tools make interactions better and help move toward more constructivist teaching styles, addressing the question of how effective technology is in early childhood environments (B Cavas, 2024). The research points out that when teachers use technology, learning outcomes can improve, even while facing problems like the need for better training and resources (N/A, 2014). These findings have significant effects on both academic discussions and real-world teaching practices, potentially creating new benchmarks for using technology in early learning spaces (Adima MF et al., 2025). Additionally, the study highlights changes in communication between educators and families, which is key for building home-school relationships that benefit children's development (Chhibber S et al., 2024). As schools deal with the challenges of digital integration, it is crucial to create frameworks that prepare upcoming teachers with the skills and knowledge for effective tech use (Samosir LRS et al., 2024). Future research should look at the long-term effects of digital technology on early education, particularly focusing on the various tech tools available to different socio-economic groups (Jamalova M, 2024). Studies should also look at how digital literacy in teacher training is needed in the curriculum to help teachers use available technology effectively (Luo Q et al., 2024). Moreover, paying more attention to the emotional and social aspects of technology in early childhood can deepen the understanding of its effects on young students (Bahroun Z et al., 2023). Ultimately, by connecting academic research with practical use, this paper adds to the body of knowledge aiming to educate a tech-savvy generation and adapt to the changing landscape of early childhood education (Falloon G, 2020)(N/A, 2019). To achieve this, stakeholders in education should focus on continuous professional development, making sure teachers can keep up with new technologies and teaching techniques (Kim S et al., 2019)(McKenney S et al., 2018). Therefore, the information collected in this study not only provides a basic understanding of digital transformation in early childhood education but also serves as a driving force for future innovations and studies in this active area (Okoye K et al., 2022)(Bin-Hady WRA et al., 2021)(Schina D et al., 2020). Future collaborative research should evaluate how well different digital tools work and the cultural factors that affect their use in various settings (Rosalía Tena R et al., 2019)(Al-Azawei A, 2019)(Tlili A et al., 2022)(Zhai X et al., 2021)(Geldsetzer P, 2020).

References

- B. Cavas (2024) Editorial. Science Education International. doi: https://www.semanticscholar.org/paper/a199905c497509bc31048e0f8e321619a0749b54
- (2014) Tablets in K-12 Education: Integrated Experiences and Implications. doi: https://www.semanticscholar.org/paper/f87b236f662fa33aaa21fbe5727548b266ee4055
- Mohamad Fauzan Adima, Baharudin, Imam Syafe'i, Siti Zulaikha, Beti Susilawati, Qonita Shabira (2025) Digital Literacy Trends in Islamic Perspective in Higher Education: A Bibliometric Review. Jurnal Penelitian Pendidikan IPA. doi: https://www.semanticscholar.org/paper/80ff362efd94aff35497b6df705e3b4da9d3800a
- Sanyukta Chhibber, Babita Rawat, Dhani Shanker Chaubey, Richa Khugshal (2024) Identifying factors influencing faculty attitude towards digital technology in higher education and its impact on faculty engagement and work performance: a mediating analysis. F1000Research. doi: https://www.semanticscholar.org/paper/14803385360c1663f9d0474820fb1d3b39106f83
- Leony Ruke Sadaria Samosir, D. M. S. Purwanegara (2024) Strategy for Embracing Digital Technology at XYZ Life Insurance Company. International Journal of Current Science Research and Review. doi: https://www.semanticscholar.org/paper/63d9acbf241faf85984efc9e3ce015c6e13593ff
- Mazhminat Jamalova (2024) Integrating Modern Technology in English Language Teaching: Innovations and Outcomes in School Education. Eurasian Science Review An International peer-reviewed multidisciplinary journal. doi: https://www.semanticscholar.org/paper/c09f0296e87311a5bdd107cada1d3e030df3702a
- Qianmai Luo, Chengshuang Sun, Ying Li, Zhenqiang Qi, Guozong Zhang (2024) Applications of digital twin technology in construction safety risk management: a literature review. Engineering, Construction and Architectural Management. doi: https://www.semanticscholar.org/paper/3f7c83432df71dda46e357bc021063b715498f2c
- Zied Bahroun, Chiraz Anane, Vian Ahmed, Andrew Zacca (2023) Transforming Education: A Comprehensive Review of Generative Artificial Intelligence in Educational Settings through Bibliometric and Content Analysis. Volume(15), 12983-12983. Sustainability. doi: https://doi.org/10.3390/su151712983

- Garry Falloon (2020) From digital literacy to digital competence: the teacher digital competency (TDC) framework. Volume(68), 2449-2472. Educational Technology Research and Development. doi: https://doi.org/10.1007/s11423-020-09767-4
- (2019) The Heavy Burden of Obesity. . OECD health policy studies. doi: https://doi.org/10.1787/67450d67-en
- Sharon Kim, Mahjabeen Raza, Edward Seidman (2019) Improving 21st-century teaching skills: The key to effective 21st-century learners. Volume(14), 99-117. Research in Comparative and International Education. doi: https://doi.org/10.1177/1745499919829214
- Susan McKenney, Thomas C. Reeves (2018) Conducting Educational Design Research. . Routledge eBooks. doi: https://doi.org/10.4324/9781315105642
- Kingsley Okoye, Hussein Haruna, Arturo Arrona-Palacios, Héctor Nahún Quintero, Luis Omar Peña Ortega, Angela Lopez Sanchez, Elena Arias Ortiz, et al. (2022) Impact of digital technologies upon teaching and learning in higher education in Latin America: an outlook on the reach, barriers, and bottlenecks. Volume(28), 2291-2360. Education and Information Technologies. doi: https://doi.org/10.1007/s10639-022-11214-1
- Wagdi Rashad Ali Bin-Hady, Nasser Omer Mubarak Al-Tamimi (2021) The use of technology in informal English language learning: evidence from Yemeni undergraduate students. Volume(17), 107-120. Learning and Teaching in Higher Education Gulf Perspectives. doi: https://doi.org/10.1108/lthe-09-2020-0037
- Despoina Schina, Vanessa Esteve González, Mireia Usart, José Luis Lázaro Cantabrana, Mercè Gisbert Cervera (2020) The Integration of Sustainable Development Goals in Educational Robotics: A Teacher Education Experience. Volume(12), 10085-10085. Sustainability. doi: https://doi.org/10.3390/su122310085
- Rosalía Romero Tena, María Puig Gutiérrez, María del Carmen Llorente Cejudo (2019) Technology use habits of children under six years of age at home. Volume(27), 340-362. Ensaio Avaliação e Políticas Públicas em Educação. doi: https://doi.org/10.1590/s0104-40362019002701752
- Ahmed Al-Azawei (2019) What Drives Successful Social Media in Education and E-learning? A Comparative Study on Facebook and Moodle. Volume(18), 253-274. Journal of Information Technology Education Research. doi: https://doi.org/10.28945/4360
- Ahmed Tlili, Ronghuai Huang, Boulus Shehata, Dejian Liu, Jialu Zhao, Ahmed Hosny Saleh Metwally, Huanhuan Wang, et al. (2022) Is Metaverse in education a

blessing or a curse: a combined content and bibliometric analysis. Volume(9). Smart Learning Environments. doi: https://doi.org/10.1186/s40561-022-00205-x

- Xuesong Zhai, Xiaoyan Chu, Ching Sing Chai, Morris Siu-Yung Jong, Andreja Istenič Starčič, Michael Spector, Jia Liu, et al. (2021) A Review of Artificial Intelligence (AI) in Education from 2010 to 2020. Volume(2021). Complexity. doi: https://doi.org/10.1155/2021/8812542
- Pascal Geldsetzer (2020) Knowledge and Perceptions of COVID-19 Among the General Public in the United States and the United Kingdom: A Cross-sectional Online Survey. Volume(173), 157-160. Annals of Internal Medicine. doi: https://doi.org/10.7326/m20-0912

SHIKSHA SAMVAD
PASSION TOWARDS EXCELLENCE

SHIKSHA SAMVAD

An Online Quarterly Multi-Disciplinary
Peer-Reviewed or Refereed Research Journal
ISSN: **2584-0983 (Online)** Impact-Factor, **RPRI-3.87**
Volume-02, Issue-03, March- 2025
www.shikshasamvad.com
Certificate Number-March-2025/12

Certificate Of Publication

This Certificate is proudly presented to

Preeti Manan

For publication of research article title

"The impact of digital transformation on early childhood education"

Published in 'Shiksha Samvad' Peer-Reviewed and Refereed Research Journal and E-ISSN: 2584-0983(Online), Volume-02, Issue-03, Month March, Year- 2025, Impact-Factor, RPRI-3.87.

Dr. Neeraj Yadav
Editor-In-Chief

Dr. Lohans Kumar Kalyani
Executive-chief- Editor

Note: This E-Certificate is valid with published paper and the paper must be available online at www.shikshasamvad.com