

# THE URGENCY OF INCLUSIVE EDUCATION IN THE 21ST CENTURY : OPPORTUNITIES, CHALLENGES, FUTURE AND RESEARCH RECOMMENDATIONS

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**Abstract:** Inclusive education in the 21st century presents significant opportunities and challenges alongside technological advancements and global social changes. This study aims to explore opportunities, challenges, and recommendations for future research in the implementation of inclusive education. The methodology employed in this research includes bibliometric analysis and a systematic literature review, utilizing Publish or Perish (PoP) and VOSviewer applications to process data retrieved from the Web of Science (WoS) database on inclusive education from 2021 to 2025. The research findings highlight three main aspects (1) opportunities can be leveraged to support the implementation of inclusive education in the 21st century, particularly in the context of globalization, digital transformation, and the post-COVID landscape; (2) challenges in achieving inclusive education in the 21st century, particularly in light of the pandemic's impact; (3) strategies and research recommendations are needed to develop a more inclusive, adaptive, and sustainable education system for the future, especially with regard to fostering 21st-century skills for all learners.

**Key words:** Inclusive Education, 21st Century, Opportunities, Challenges.

**Abstrak:** Pendidikan inklusif di abad ke-21 menghadirkan peluang dan tantangan yang signifikan di samping kemajuan teknologi dan perubahan sosial global. Studi ini bertujuan untuk mengeksplorasi peluang, tantangan, dan rekomendasi untuk penelitian masa depan dalam implementasi pendidikan inklusif. Metodologi yang digunakan dalam penelitian ini mencakup analisis bibliometrik dan tinjauan pustaka sistematis, memanfaatkan aplikasi Publish or Perish (PoP) dan VOSviewer untuk memproses data yang diambil dari basis data Web of Science (WoS) tentang pendidikan inklusif dari tahun 2015 hingga 2025. Temuan penelitian menyoroti tiga aspek utama (1) peluang yang dapat dimanfaatkan untuk mendukung pelaksanaan pendidikan inklusif di abad ke-21, khususnya dalam konteks globalisasi, transformasi digital, dan lanskap pasca-COVID; (2) tantangan utama dalam mencapai pendidikan inklusif di abad ke-21, khususnya terkait dengan dampak pandemi; (3) strategi dan rekomendasi penelitian yang dibutuhkan untuk mengembangkan sistem pendidikan yang lebih inklusif, adaptif, dan berkelanjutan di masa depan, terutama dalam mendukung pengembangan keterampilan abad ke-21 bagi semua peserta didik.

**Kata kunci:** Pendidikan Inklusif, Abad 21, Peluang, Tantangan.

The 21st century presents significant challenges and opportunities for the education sector. In an era defined by globalization, digital transformation, and an increased awareness of social justice, the need for inclusive education has become increasingly urgent (Avdiu et al., 2025). Inclusive education is not merely about

integrating students from diverse backgrounds and needs into the general education system, but also about creating an ecosystem that values diversity, ensures equal opportunities, and eliminates structural, social, and cultural barriers that hinder active participation for every individual (Camelia & Tasaufy, 2025). However, despite the

growing recognition of its importance, significant gaps remain in the literature, especially in terms of how inclusive education has evolved in the post-COVID era and its intersection with the development of 21st-century skills.

Although inclusive education has become a global agenda through initiatives such as Sustainable Development Goal (SDG) 4, which emphasizes quality and inclusive education for all, its implementation remains far from perfect (Nuzulia et al., 2021). Education systems in many countries are often still exclusive, focusing on homogeneous academic standards while overlooking the needs of students facing various challenges such as disabilities, economic disparities, gender discrimination, and ethnic marginalization (Uyun et al., 2024). As a result, many individuals are excluded from accessing proper education, exacerbating social inequalities and hindering holistic human development. The urgency of addressing these challenges is underscored by recent data from UNESCO, which reveals that, as of 2023, an estimated 250 million children and youth globally are still out of school, a situation that has worsened due to the COVID-19 pandemic (UNESCO, 2023). Furthermore, the pandemic has disproportionately impacted marginalized groups, including those with disabilities, girls, and children from lower-income families, exacerbating existing disparities and highlighting the critical need for inclusive education systems that can provide equitable learning opportunities for all (Finkelstein et al., 2021). This situation necessitates a renewed focus on inclusive education as a key driver for achieving the SDGs and addressing global inequalities in education.

Inclusive education also faces contradictions in practice. On one hand, this approach offers great potential to create more inclusive, tolerant, and cohesive societies (Artiles, 2020). On the other hand, many education systems lack the necessary infrastructure, policies, and human resources to support the diverse needs of learners. Challenges such as inadequate teacher training, curricula misaligned with inclusive principles, and limited funding are frequently encountered (Hyassat et al., 2024).

Additionally, cultural and social resistance to inclusivity often slows down the adoption of more equitable education systems. The literature on this subject is sparse when it comes to addressing the post-COVID challenges and how education systems can adjust to better meet the needs of a diverse student population in this new reality.

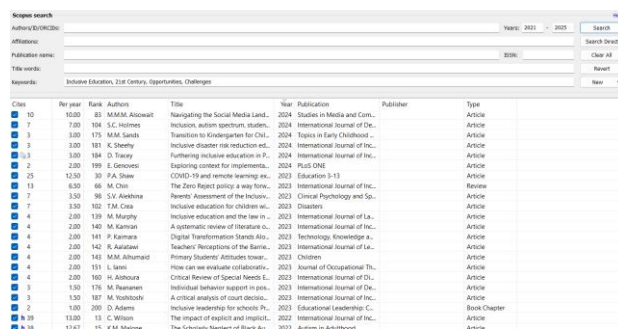
Amid these challenges, inclusive education presents significant opportunities to develop more adaptive and empathetic generations in an era of disruption (Onyesom & Igberaharha, 2021). Technological innovations, for instance, can serve as vital tools for creating flexible learning materials, personalizing education, and supporting students with special needs (Marantika et al., 2024). However, optimizing such technologies requires policies that prioritize inclusivity and evidence-based approaches to ensure that all students benefit equally (Ahtiainen et al., 2021). The current literature lacks comprehensive research on how digital transformation can be leveraged specifically for inclusive education in the context of the post-pandemic era, particularly in fostering the development of 21st-century skills like critical thinking, collaboration, and digital literacy among diverse learners.

The primary aim of this study is to fill this gap by engaging researchers, policymakers, educators, students, and technologists in an urgent dialogue about what lies ahead. This study seeks to provide an overview of studies that explore the opportunities, challenges, and recommendations for future research related to inclusive education in the 21st century, particularly in the wake of the COVID-19 pandemic. This discussion is expected to strengthen the conceptual and practical foundations of inclusive education and drive the transformation of education systems to be more responsive to the diverse needs of the global community. The following research questions form the basis of this review: (1) What opportunities can be leveraged to support the implementation of inclusive education in the 21st century, particularly in the context of globalization, digital transformation, and the post-COVID landscape? (2) What are the main challenges in achieving inclusive education in the 21st century, particularly in light of the pandemic's

impact? (3) What strategies and research recommendations are needed to develop a more inclusive, adaptive, and sustainable education system for the future, especially with regard to fostering 21st-century skills for all learners?

## METHOD

This study adopts a comprehensive approach to explore the urgency of inclusive education in the 21st century, focusing on opportunities, challenges, and future research recommendations through bibliometric analysis and systematic literature review. The data collected in this research was analyzed using the Publish or Perish (PoP) application and the VOSviewer tool. Keywords used include Inclusive Education, 21st century, opportunities, challenges, and future research recommendations. The referenced articles in this study span the period from 2021 to 2025, covering the last decade. The literature review conducted follows the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). The search engines used for gathering relevant literature were Publish or Perish and OpenKnowledgeMaps (Base: All Disciplines). However, the literature collected consists only of research findings obtained from 2020 to 2025, as studies from previous years were deemed less relevant and representative of the current conditions. The analysis results from various research sources are presented as bibliometric networks using VOSviewer. The database search results for the urgency of inclusive education in the 21st century based on opportunities, challenges, and future research recommendations are illustrated in Figure 1 and Figure 2.



Rank	Authors	Title	Year	Publication	Publisher	Type
10	10,220	452 M.M. Alkhatib	2024	Journal of Media and Com.	International Journal of De.	Article
7	7,280	104 S.C. Holmes	2024	Transition to Kindergarten for Chi.	Topics in Early Childhood ..	Article
3	3,800	175 M.M. Saad	2024	Inclusive disaster risk reduction ed.	International Journal of Inc.	Article
3	3,800	181 K. Shetty	2024	Furthering inclusive education in P.	International Journal of Inc.	Article
13	3,500	184 D. Tracey	2024	Exploring context for implementa.	Plus ONE	Article
2	2,800	189 J. Genovesi	2023	COVID-19 and remote learning ex.	Education 3-13	Article
15	1,120	30 P.A. Shaw	2023	The Zero Report policy: a way forw.	International Journal of Inc.	Article
13	6,500	86 M. Chai	2023	Parents' Assessment of the Inclusive.	Clinical Psychology and Sp.	Review
7	3,500	98 S.V. Andriana	2023	Inclusive education for children w.	Children	Article
7	3,500	102 T.M. Cira	2023	Inclusive education and the law in ..	International Journal of La.	Article
4	2,200	139 M. Murug	2023	A systematic review of literature o.	International Journal of Inc.	Article
4	2,200	140 M. Karmar	2023	Digital Transformation (Standi Alis.	Technology, Knowledge & ..	Article
4	2,200	141 P. Karmar	2023	Teachers' Perceptions of the Barrie.	International Journal of La.	Article
4	2,200	142 R. Asatiani	2023	Primary Students' Attitudes toward.	Children	Article
4	2,200	143 M.M. Alkhatib	2023	How can we evaluate collaborativ.	Journal of Occupational Th.	Article
4	2,200	151 L. Ianni	2023	Critical Review of Special Needs E.	International Journal of In.	Article
4	2,200	152 M. Shauwan	2023	Individual behavior support in spe.	International Journal of De.	Article
3	1,500	187 M. Yoshitoki	2023	A critical analysis of court decisio.	International Journal of Inc.	Article
2	1,000	200 D. Adams	2023	Inclusive leadership for schools In.	Educational Leadership C.	Book Chapter
39	1,000	13 C. Wilson	2022	The impact of explicit and implicit.	International Journal of Inc.	Article
16	17,617	15 K.M. Mawere	2019	The Victorian Narrative of Black Au.	Autism in Adulthood	Article

Figure 1. Database Search Results for The Urgency of Inclusive Education in

the 21st Century: Opportunities, Challenges, Future Research Recommendations

This study uses the Web of Science (WoS) database to compile the initial list of articles. WoS is one of the most widely used tools for conducting systematic literature reviews. The search focused on papers that included the term "inclusive education" in their keywords, abstracts, or titles. The initial search yielded a total of 200 entries. Further insights into this database search were obtained through data metrics that provide information on publications, citation years, publication years, and other details. Complete information is presented in Table 1.

Table 1. Data Metrics Results: The Urgency of Inclusive Education in the 21st Century

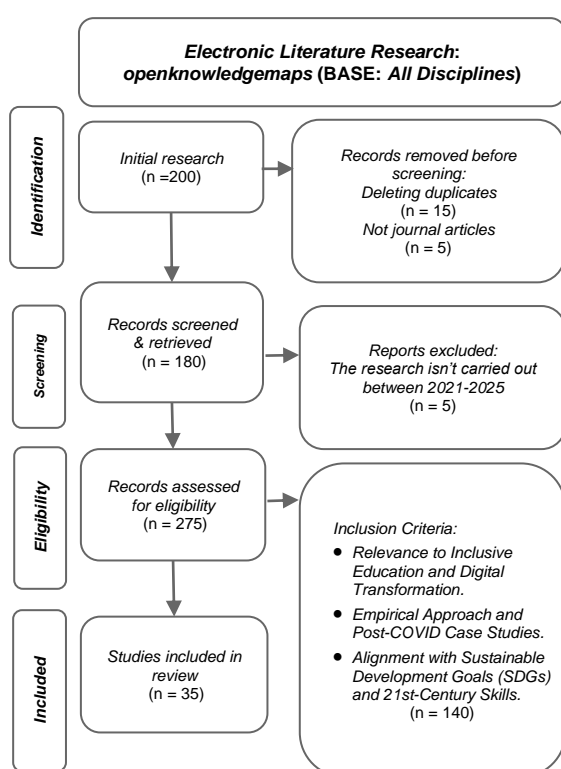
Indicators	Data Metric Results
Publication Years	: 2021-2025
Citation Years	: 5 (2021-2025)
Papers	: 200
Citations	: 1770
Cities/year	: 177.00
Cities/paper	: 8.85
Cities/author	: 1770.00
Papers/author	: 200.00
h-index	: 1.00
g-index	: 21
hI,norm	: 35
hI,annual	: 21
hA-index	: 2.10
Pappers with ACC > =	: 98,61,13,6,2 1,2,5,10,20

The data were synthesized using thematic coding. In this process, articles were first read and categorized into key themes like opportunities for inclusive education, challenges faced by educators and policymakers, and the role of technology. The thematic coding process was performed in stages: from the initial coding of the articles to grouping these codes into broader categories. This approach allowed for the identification of patterns and trends in the literature.

To ensure consistency, interrater reliability was used. Two independent researchers coded a sample of the articles. Their results were compared using Cohen's Kappa, yielding a value of 0.85, indicating strong agreement. This process ensured that the thematic coding was reliable and

consistent across coders. Furthermore, the clusters generated by the VOSviewer tool were cross-checked with the thematic categories to confirm that the key topics identified in the bibliometric network matched the findings from the thematic analysis. Expert review was conducted to validate the relevance and accuracy of these clusters.

This methodology guarantees that the findings of the study are both comprehensive and reliable, providing meaningful insights into the current state of research on inclusive education in the 21st century.



**Figure 2.** Results of Systematic Literature Review

## RESULTS

### Inclusive Education

Inclusive education, as defined by (Ainscow, 2021), emphasizes the creation of educational environments that meet the needs of all students, particularly those from marginalized groups. This approach aims to ensure that educational systems move beyond segregated models and offer equal opportunities for every student, regardless of socioeconomic background, disability, gender, or ethnicity. UNESCO (2020) further elaborates on this concept, emphasizing the

importance of integrating all students into the mainstream education system, ensuring that they can actively participate, learn, and thrive in an environment that recognizes and respects diversity.

Inclusive education has garnered significant global attention in recent years due to its potential to reduce educational inequalities. A report by the OECD (2021) highlighted the need for educational systems to provide personalized learning experiences, especially for students with disabilities or those from marginalized communities. These students often face numerous barriers, such as a lack of resources, insufficient support, and inadequate teacher preparedness, which hinder their full participation in the classroom. Research by Jordan, Lodra & Fera (2024) underscores that inclusive education requires not only a shift in educational policies but also a change in societal attitudes toward students with diverse needs. Therefore, inclusive education is a comprehensive approach that necessitates interventions at the individual, school, and policy levels to ensure that all students have equitable access to quality education.

However, the implementation of inclusive education often faces practical barriers, such as inadequate infrastructure, insufficient teacher training, and limited funding. Despite these challenges, the opportunity presented by digital technologies and assistive learning tools can help bridge these gaps. According to a study by Venugopal & Vinoth (2024), technologies such as adaptive learning platforms and online resources can create more flexible learning environments, allowing students to engage with the curriculum at their own pace and in ways that cater to their individual needs. Nevertheless, the research emphasizes that a successful inclusive education system must also address broader structural factors, including educational policies, teacher capacity, and community involvement, all of which are critical to ensuring the long-term sustainability of inclusive practices.

### 21st-Century Skills

21st-century skills refer to a set of competencies that prepare students to succeed in an increasingly complex,

interconnected, and digital world. P21 Framework (2020) identifies four key areas: learning and innovation skills, digital literacy skills, career and life skills, and core subjects such as mathematics, science, and literacy. These skills are considered essential for addressing contemporary challenges, including rapid technological advancements, globalization, and the growing demands of the workforce.

The OECD (2021) framework expands upon these skills by emphasizing the importance of critical thinking, creativity, and collaboration as key competencies. The ability to critically assess information and collaborate with others on problem-solving tasks is seen as fundamental to addressing complex global challenges such as climate change, economic inequality, and technological disruption. Furthermore, the OECD stresses that 21st-century skills also encompass the ability to adapt and engage in continuous learning, given the rapid pace of societal and technological change.

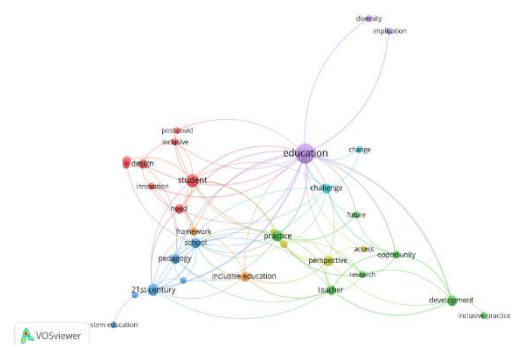
In the context of inclusive education, the integration of 21st-century skills is particularly significant. Research by Abduraxmanova (2025) suggests that students in inclusive classrooms benefit greatly from learning these skills, as they are encouraged to collaborate with peers from diverse backgrounds and engage with problems that require innovative solutions. The incorporation of STEM (Science, Technology, Engineering, and Mathematics) education into the curriculum is often cited as a key method for developing these competencies, as it encourages students to apply critical thinking and problem-solving skills in real-world contexts. According to Pazey et al. (2024), inclusive STEM education not only develops academic knowledge but also helps students acquire the soft skills necessary to thrive in a modern, technology-driven society.

Recent studies have shown that the integration of digital literacy and technological proficiency into inclusive education can significantly enhance student engagement and learning outcomes. For instance, Minea (2020) from the OECD reports that access to digital tools allows students to explore content at their own pace, making learning more personalized and inclusive. However, despite these opportunities, challenges remain in

ensuring equitable access to digital tools and fostering digital literacy skills among all students, particularly in low-resource settings. Therefore, a balanced approach is needed, where both digital and non-digital skills are integrated into the curriculum to ensure that all students have the necessary tools and competencies for success in the 21st century.

The challenges in this study can be addressed through the following three findings: (1) Opportunities that can be leveraged to support the implementation of inclusive education in the 21st century, particularly in the context of globalization and digital transformation; (2) Key challenges in realizing inclusive education in the 21st century; and (3) Strategies and research recommendations needed to develop a more inclusive, adaptive, and sustainable education system in the future. The research findings utilizing VOSviewer as a bibliometric analysis tool for identifying opportunities in inclusive education in the 21st century are presented in Figure 3. The research findings on the overlay visualization of the key challenges in achieving inclusive education in the 21st century are shown in Figure 4. Lastly, the findings on strategies and research recommendations necessary for developing a more inclusive, adaptive, and sustainable education system for the future are depicted in Figure 5.

### Opportunities in Inclusive Education in The 21st Century



**Figure 3.** Network Visualization of Opportunities and Priorities for Inclusive Education in the 21st Century

The analysis of the clusters depicted in Figure 3, using the VOSviewer software, highlights the critical urgency of prioritizing



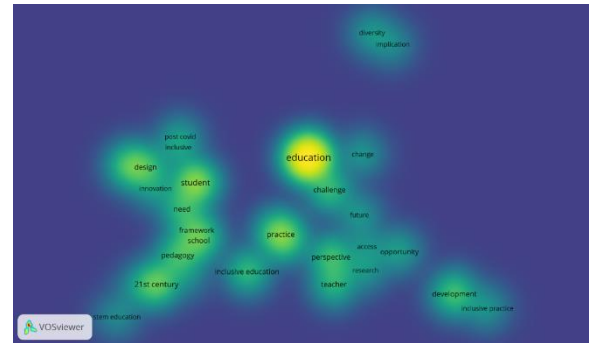
disabilities, have access to quality education and are encouraged to participate in mainstream classes. Conversely, in developing countries such as India, inclusive education faces numerous challenges, primarily due to limited resources, inadequate teacher training, and lack of infrastructure. For instance, while India has made strides in passing laws to promote inclusive education, such as the Right to Education Act, implementation remains inconsistent across states, with rural and marginalized areas facing more significant barriers (Venkatesan, 2022). Additionally, a lack of awareness about the importance of inclusive education and resistance from traditional education systems further hinder its success. These disparities highlight the need for tailored strategies that consider the unique challenges faced by countries at different levels of development.

Figure 4 illustrates the overlay visualization of inclusive education, showing key themes such as post-COVID adjustments, STEM education, and 21st-century skills. As seen in the visualization, inclusive education has become highly relevant in recent years, with a focus on several keywords reflecting significant transformations in the education system (Avdiu et al., 2025). The post-COVID theme highlights the need to adapt educational systems to ensure that all students, especially those disproportionately affected by the pandemic, are not left behind (Eirdosh &

Hanisch, 2021). STEM education remains a priority, aiming to ensure that all students, regardless of background or disability, have access to quality education in science, technology, engineering, and mathematics (Sidekerskienė & Damaševičius, 2023). The integration of 21st-century skills—creativity, collaboration, and problem-solving—is increasingly significant, as these skills are essential for students to thrive in a rapidly changing and interconnected world (Timan & Imron, 2022). Despite these opportunities, challenges remain, such as access to digital tools, teacher preparedness, and the need for inclusive teaching methods in diverse classrooms (Imron et al., 2025). These challenges make it essential to understand the reasons behind the failure of inclusive education policies, particularly the barriers that hinder students' participation in the classroom (Prasetyo et al., 2021).

The comparison between developed and developing countries in the implementation of inclusive education reveals substantial differences in educational outcomes. For example, in countries like Canada and Sweden, inclusive education practices are well-supported by policies and are a central part of the curriculum, with educators receiving ongoing professional development and support. These nations have invested heavily in inclusive education infrastructure, ensuring that students with diverse needs are integrated into regular classrooms (Roberts & Inman, 2023). However, in many African countries such as Nigeria and Uganda, inclusive education faces significant barriers due to systemic issues such as lack of funding, inadequate facilities, and cultural attitudes that favor traditional educational models over inclusive approaches (Vashishth et al., 2024). In these countries, while inclusive education policies may exist on paper, their execution is often fragmented, leading to limited access for students with disabilities and other marginalized groups. A comparative analysis of the strategies implemented in these contrasting regions could provide valuable insights into overcoming the challenges faced by less-resourced nations in adopting inclusive education models.

## Future Research Recommendations in The 21st Century



**Figure 5.** Density Visualization of Keyword Concentrations for Research Recommendations in Developing 21st-Century Inclusive Education

Figure 5 presents the density visualization of the urgency of inclusive education in the 21st century. Key terms such as "education," "student," "post-COVID," and "inclusive" underscore the primary focus on enhancing accessibility to education for all students, especially in the aftermath of the pandemic (Karakose et al., 2021)). The emphasis on 21st-century skills and STEM education highlights the importance of preparing students with the skills necessary to thrive in an increasingly technology-driven world (Sidekerskienė & Damaševičius, 2023). Additionally, terms such as "practice," "framework," and "teacher" emphasize the critical role of educators and the frameworks that support inclusive education (Venugopal & Vinoth, 2024).

Future research should focus on strategies for overcoming the challenges faced by inclusive education systems, particularly post-pandemic (Graham, 2020). Investigating how countries have adjusted their educational systems in response to COVID-19 and whether these adaptations have led to more inclusive practices would be valuable (Robiyansah, 2020). Moreover, future studies could explore how 21st-century skills can be effectively integrated into inclusive classrooms, fostering collaboration, creativity, and critical thinking in diverse learning environments (Onyesom & Igberaharha, 2021). Cross-national studies that compare the implementation of inclusive education policies in different contexts would be essential in identifying effective practices

and barriers (Finkelstein et al., 2021). Lastly, there is a need for more research into the development and evaluation of inclusive education frameworks, particularly in low-resource settings, to ensure that all students, regardless of their background, can access equitable educational opportunities (Dukes & Berlingo, 2020).

## DISCUSSION

### Potential for Growth in Inclusive Education in the 21st Century

Inclusive education in the 21st century offers significant opportunities to ensure that education systems can adapt to evolving times and meet the diverse needs of students (Raciti, 2022). One of the key opportunities emerging is the integration of technology in the learning process, which enables more inclusive and accessible education for all students, including those with special needs (Sibi & Miranda, 2022). With advancements in technology, such as online learning and digital assistive tools, education can be tailored to individual needs, creating more personalized and flexible learning experiences (Volosnikova & Fedina, 2023). Clusters highlighting the application of innovations in post-pandemic education design demonstrate how technology can simplify material delivery, even in conditions previously inaccessible to some students (Almazroa & Alotaibi, 2023). This presents a significant opportunity for inclusive education to not only accommodate students with disabilities but also to expand access for students from diverse social and economic backgrounds (Ruppar et al., 2023).

Moreover, there are considerable opportunities in developing 21st-century skills that align with the demands of a rapidly changing workforce. Inclusive education can serve as a platform to teach essential skills such as critical thinking, problem-solving, and cross-cultural collaboration, which are vital for addressing global challenges (Beasy et al., 2024). Clusters discussing research-based education and STEM integration reflect opportunities to equip students with the technical and innovative skills needed for the future (Chansaengsee, 2024). By introducing more dynamic and flexible curricula, inclusive

education not only ensures equal access for all students but also provides them with the opportunity to develop their potential in contexts relevant to a continuously evolving world (Sagredo-Lillo et al., 2024). Thus, inclusive education is not just about offering equal opportunities but also about creating spaces for students to grow according to their needs and interests in an increasingly complex era (Pérez & Montoya, 2022).

### Obstacles to Achieving True Inclusivity in Education in the Modern Era

By the end of 2024, inclusive education faces several major challenges related to post-pandemic recovery, STEM education integration, and the strengthening of 21st-century skills (Ramasamy et al., 2024). The focus on post-COVID recovery highlights significant challenges in adjusting disrupted education systems, particularly for students most affected by the pandemic (Vonitsanos et al., 2024). Students from low socioeconomic backgrounds, those with disabilities, or those with limited access to technology have become increasingly marginalized during recovery efforts (Acuña, 2024). Consequently, despite numerous attempts to realign education, existing systems often fail to address prevailing inequities, making sustainable inclusive education more difficult to achieve (Carvalho et al., 2023). Although many inclusive policies have been implemented, significant challenges remain in creating equal access, especially in terms of adequate resources and support (Bobko et al., 2024).

The integration of STEM education and 21st-century skills into inclusive education systems reveals deeper structural challenges (Okada et al., 2024). While STEM education is increasingly recognized as essential for preparing students for a world full of disruptions, many education systems still fail to provide equitable access for all students, particularly those with limitations or special needs (Vashishth et al., 2024). STEM education, which should ideally provide equal opportunities, often exacerbates disparities due to the lack of facilities, teacher training, or appropriate resources to support such students (Ogodo, 2024). Another challenge lies in integrating 21st-century skills, such as



creativity and problem-solving, into an inclusive curriculum (Rapanta et al., 2021). Without a more adaptive approach and systems that are more responsive to diverse needs, achieving effective and relevant inclusive education for the 21st century will remain a difficult goal (Villarreal & Scott, 2024).

### **Areas for Future Exploration in Advancing Inclusive Education**

Inclusive education in the 21st century faces significant challenges, as highlighted in the density visualization consisting of keywords such as education, student, post-COVID, and inclusive, which underscore the urgency to improve post-pandemic education systems (Firdausi et al., 2024). The COVID-19 pandemic has exacerbated educational inequalities, leaving many students marginalized due to limited access to technology and adaptive learning methods (Sidekerskienė & Damaševičius, 2023). Although there is a high concentration on the term inclusive, this also reveals deep shortcomings in efforts to ensure that inclusive education truly reaches all layers of students (Drigas et al., 2023). Many education systems remain trapped in superficial inclusion policies that fail to address more structural issues, such as social inequalities and resource disparities. With an emphasis on post-COVID and student, the question arises of how effectively inclusive education can rapidly adapt to changing needs and whether existing strategies are sufficient to reach those most affected by the pandemic (Krasniqi et al., 2022).

STEM education and 21st-century skills have emerged as key keywords, indicating deeper disparities in the implementation of inclusive education (Brazal et al., 2022). STEM education and 21st-century skills are increasingly regarded as integral to preparing students for the future; however, access to such education remains highly limited in many cases (Alhothali, 2021). Students from diverse backgrounds, especially those with physical, social, or economic limitations, often do not have equal opportunities to access quality STEM-based education (Syachbana, 2024). Here, the role of teachers and the development of inclusive frameworks become

crucial, yet many teachers lack adequate training to create genuinely inclusive classrooms. Therefore, future research recommendations should focus on critically evaluating existing inclusive education frameworks to determine whether implemented policies truly facilitate equal access for all students. Additionally, these recommendations should examine how education systems can effectively respond to post-pandemic challenges by designing curricula that are more relevant and responsive to the needs of 21st-century students (Agung et al., 2022).

### **CONCLUSION**

Inclusive education in the 21st century faces pressing challenges that need urgent attention, particularly in the context of post-pandemic recovery, gaps in STEM education, and the integration of 21st-century skills. While technological innovations offer transformative opportunities for expanding educational access, the persistent structural inequalities in education systems are a significant obstacle to true inclusivity. Despite the potential of digital tools and adaptive learning systems to enhance educational opportunities, the gap in resources, teacher preparedness, and support systems remains a serious barrier, especially for students who have been disproportionately affected by the pandemic or come from marginalized backgrounds.

These disparities call for more than just incremental changes; there needs to be a radical shift in how education systems approach inclusivity. Ministries of education, UNESCO, and curriculum developers must go beyond the current frameworks and address systemic issues such as access to resources, teacher training, and the institutionalization of inclusive policies. It is crucial that these stakeholders prioritize creating adaptable and dynamic curricula that not only accommodate diverse learners but also challenge existing norms around who has access to quality education. Simply adopting inclusive education policies without addressing the root causes of exclusion such as socio-economic inequality, limited digital access, and teacher capacity will continue to perpetuate disparities in the long run.

On a theoretical level, the study's findings underscore the need for a more comprehensive and context specific framework for inclusive education. Existing models must be re-evaluated and adapted to reflect the current socio-economic and technological realities. New approaches should integrate 21st-century skills, digital literacy, and critical thinking more effectively, ensuring that they are accessible to all students, including those with special needs or from disadvantaged backgrounds. Additionally, future research must not only focus on policy analysis but also actively explore how inclusive education can be better implemented in practice, ensuring that theory aligns with real world implementation. Without these critical reforms, inclusive education risks remaining a lofty ideal rather than a tangible reality for all students.

## SUGESSTION

Future research should focus on strengthening the implementation of inclusive education by ensuring that existing policies are truly effective in providing equal access to education for all students. Strategies that can be developed include enhancing teacher training to better accommodate student diversity, developing a more adaptive curriculum tailored to individual needs, and utilizing technology to support inclusive learning. Additionally, continuous evaluation of existing policies is necessary to identify challenges and formulate more concrete solutions in achieving a more inclusive and sustainable education system.

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