# MEMBENTUK PEMBELAJARAN YANG INKLUSIF DAN SOKONGAN DALAM MASYARAKAT 5.0: CABARAN, PELUANG, DAN IMPLIKASI DASAR

# CREATING INCLUSIVE AND SUPPORTIVE LEARNING ENVIRONMENTS IN THE 5.0 SOCIETY: CHALLENGES, OPPORTUNITIES, AND POLICY IMPLICATIONS (Learning Environments in The 5.0 Society)

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# ABSTRAK

Abstract

Pembentukan persekitaran pembelajaran yang inklusif dan menyokong adalah penting untuk memberi kuasa kepada pelajar dalam konteks masyarakat 5.0. Artikel ini mengkaji pelbagai pendekatan untuk meningkatkan inklusif dan sokongan dalam persekitaran pendidikan, dengan fokus khusus pada kepentingan membentuk pengalaman pelajar yang baik, penyertaan aktif, dan sensitiviti budaya. Dalam keadaan masyarakat 5.0 menawarkan peluang untuk reformasi pendidikan, ianya menghadapi beberapa halangan seperti infrastruktur yang tidak mencukupi dan sumber digital yang terhad. Untuk mengatasi cabaran ini dengan berkesan, adalah penting untuk meningkatkan kerjasama di antara pembuat dasar, pendidik, dan pemegang taruh. Kerjasama ini termasuk peruntukan sumber untuk pembangunan infrastruktur, pelaksanaan program literasi digital, dan usaha-usaha untuk memastikan akses yang adil. Selain itu, kepentingan kesesuaian dan fleksibiliti kurikulum tidak boleh diabaikan untuk memastikan pendidikan selaras dengan keperluan pelajar yang sentiasa berubah dan sifat dinamik dunia. Pembentukan kerjasama dan perkongsian di antara pemegang taruh adalah sangat penting dalam memudahkan proses reformasi pendidikan. Pembuat dasar memainkan peranan penting dalam membentuk persekitaran yang kondusif melalui perubahan dasar. Keperluan untuk pembangunan profesionalisme guru tidak boleh diabaikan kerana ia memainkan peranan penting dalam mendidik pendidik dengan kemahiran yang diperlukan untuk membimbing masyarakat 5.0. Oleh kerana pendidikan sekarang fokus kepada inovasi, kepelbagaian, dan pembelajaran sepanjang hayat, ianya memberi kesan yang besar dalam menggerakkan fungsi masyarakat dalam era 5.0. Ia membekalkan individu dengan kemahiran dan pengetahuan yang diperlukan untuk menerajui masa depan yang sangat dipengaruhi oleh teknologi dan jaringan yang luas.

Kata kunci: Persekitaran pembelajaran yang inklusif dan menyokong, masyarakat 5.0, cabaran pendidikan

# CREATING INCLUSIVE AND SUPPORTIVE LEARNING ENVIRONMENTS IN THE 5.0 SOCIETY: CHALLENGES, OPPORTUNITIES, AND POLICY IMPLICATIONS

# ABSTRACT

The establishment of inclusive and supportive learning environments is crucial to empower students within the context of a 5.0 society. This article examines many approaches to enhance inclusion and support within educational environments, with a particular focus on the significance of cultivating favourable student experiences, active participation, and cultural sensitivity. The 5.0 society, while offering prospects for educational reform, encounters obstacles such as insufficient infrastructure and restricted availability of digital resources. To effectively tackle these difficulties, it is essential to foster cooperation among policymakers, educators, and stakeholders. This collaborative effort should include allocating resources towards infrastructure development, implementing digital literacy programs, and promoting equitable access efforts. Furthermore, the significance of curricular relevance and flexibility cannot be overstated to ensure that education remains in sync with the everchanging requirements of learners and the dynamic nature of the world. The establishment of collaboration and partnerships among stakeholders is of utmost importance in facilitating the process of educational reform. Policymakers assume a crucial role in establishing a conducive environment by means of policy changes. The importance of teacher professional development cannot be overstated as it plays a critical role in educating educators with the necessary skills to effectively traverse the complexities of the 5.0 society. Education, because to its focus on innovation, diversity, and lifelong learning, has significant importance in driving the functioning of society in the 5.0 era. It equips people with the necessary skills and knowledge to navigate a future that is heavily influenced by technology and interconnectedness.

Keywords: Inclusive and supportive learning environments, 5.0 society, education challenges

## **Creating Inclusive and Supportive Learning Environments**

Creating inclusive and supportive learning environments is crucial in the 5.0 society to ensure that all students feel valued, respected, and included. Several strategies to promote inclusivity and support in learning environments are cultivate a positive classroom culture by foster a positive classroom climate by establishing clear expectations for behaviour, respect, and inclusivity. Promote a sense of belonging by celebrating diversity and creating opportunities for students to share their backgrounds, experiences, and perspectives. Encourage kindness, empathy, and mutual respect among students

(Elias, 2019). We can implement differentiated instruction by recognize and address the diverse learning needs and abilities of students through differentiated instruction. Provide varied learning pathways, resources, and assessments that accommodate different learning styles, interests, and strengths. Individualize instruction to support students' unique needs and foster their engagement and success (Bragg et al., 2021). Create physical and emotional safety to ensure that the learning environment is physically and emotionally safe for all students. Arrange the classroom layout to facilitate collaboration and access for all students. Address bullying and harassment promptly and foster a culture of empathy and conflict resolution. Implement strategies to promote emotional well-being, such as mindfulness exercises and opportunities for self-expression (Lateef, 2020).

Another strategy by promoting student voice and agency such as empower students by giving them opportunities to have a voice in their learning. Encourage active participation, collaboration, and decision-making in the classroom. Provide opportunities for student-led discussions, project choices, and goal setting. Incorporate student feedback and ideas into instructional planning and decisionmaking processes (Charteris & Smardon, 2019). We can foster inclusive language and materials by using inclusive language and materials that represent diverse cultures, genders, abilities, and backgrounds. Incorporate multicultural literature, diverse perspectives, and inclusive examples and images into the curriculum. Avoid stereotypes and promote inclusivity in discussions, assignments, and classroom materials (Oleson, 2023). Another suggestion is collaborated with families and communities by engage families and communities in supporting an inclusive learning environment. Establish open lines of communication with families, seeking their input and involvement in their child's education. Encourage family members to share their cultural traditions and expertise. Collaborate with community organizations to provide additional support and resources (Ardoin et al., 2020). We can provide supportive structures by implement structures that support students' academic and social-emotional needs. Offer academic support through tutoring, peer mentoring, or differentiated instruction. Provide access to resources and technology for all students. Establish support systems, such as counselling services or peer mediation programs, to address students' social-emotional needs effectively (Hamilton & Gross, 2021).

Implementation of professional development for educators that provide ongoing professional development opportunities for educators to enhance their knowledge and skills in creating inclusive and supportive learning environments also important strategy. Offer training on cultural competence, differentiated instruction, restorative practices, and social-emotional learning. Equip educators with strategies to address biases, promote equity, and support diverse learners effectively (Philipsen et al., 2019). We need to have continuous assessment and reflection by regularly assess and reflect on the inclusiveness and supportiveness of the learning environment. Collect feedback from students, families, and colleagues to gauge the effectiveness of inclusive practices. Analyse data on student engagement, achievement, and well-being to inform improvements in instructional strategies and classroom climate

(Viac & Fraser, 2020). Treat all students with fairness, respect, and equity. Challenge biases and stereotypes in personal interactions and instructional decisions. Embrace cultural humility and a growth mindset, continually learning and adapting to meet the diverse needs of students (Debnam et al., 2021). By implementing these strategies, educators can create inclusive and supportive learning environments where all students feel respected, valued, and supported. Inclusive learning environments foster positive student experiences, promote engagement and learning, and prepare students to thrive in the

5.0 society as empathetic, adaptable, and culturally aware individuals.

#### **Challenges and Opportunities in Educational Transformation**

### Barriers to Educational Transformation in the 5.0 Society

While the 5.0 society presents numerous opportunities for educational transformation, there are several barriers that can hinder the process (Broo et al., 2022). These barriers include inadequate infrastructure. Insufficient access to reliable internet connectivity, technological devices, and digital resources can impede the integration of technology and hinder online learning (Adarkwah, 2021). Unequal distribution of infrastructure, particularly in marginalized or remote areas, exacerbates the digital divide and limits educational transformation. Limited digital literacy that many individuals, including students, teachers, and parents, may lack the necessary digital literacy skills to effectively navigate and utilize digital tools and platforms (Statti & Torres, 2020). Inadequate training and support in digital literacy can hinder the adoption and integration of technology in education. Resistance to change is a common barrier in educational transformation (Treve, 2021). Teachers, administrators, and stakeholders may be hesitant to adopt new pedagogical approaches, technology integration, or shifts in curriculum due to fear of the unknown, lack of training, or concerns about the impact on traditional educational practices.

Educational policies and regulations that are not adaptable or responsive to the changing needs of the 5.0 society can hinder educational transformation (Mavrodieva & Shaw, 2020). Rigid policies, standardized assessments, and curriculum constraints may limit innovation, creativity, and personalized learning approaches. Insufficient opportunities for professional development can hinder educational transformation (Almazova et al., 2020). Teachers and educators need ongoing training, support, and collaboration to develop the necessary skills and competencies for effective integration of technology, pedagogical shifts, and implementation of new approaches aligned with the 5.0 society. Access to educational resources, technology, and quality instruction can effect educational transformation (Haleem et al., 2022). Socioeconomic disparities, language barriers, and disabilities can limit opportunities for marginalized populations, exacerbating existing educational inequities in the 5.0 society. Traditional assessment and accountability systems that prioritize standardized testing and rote

memorization may not align with the skills and competencies needed in the 5.0 society (Yamada, 2023). Shifting to alternative assessment methods that measure critical thinking, creativity, and problemsolving can be challenging due to existing structures and policies.

Limited financial resources can hinder educational transformation efforts. Adequate funding is required to invest in infrastructure, technology devices, professional development, curriculum development, and support systems necessary for effective educational transformation aligned with the 5.0 society (Rodríguez-Abitia & Bribiesca-Correa, 2021). Limited research and evidence on the impact and effectiveness of innovative educational approaches and technologies can impede educational transformation. Policymakers, administrators, and educators may be hesitant to adopt new practices without robust evidence of their efficacy and impact on student learning outcomes (Tolarba, 2021). Educational transformation in the 5.0 society requires a broader societal shift in mindset and understanding of the changing needs of education. Resistance from parents, communities, or stakeholders who hold onto traditional educational models can slow down the pace of transformation (Dolph, 2017).

Addressing these barriers requires collaboration among policymakers, educators, communities, and stakeholders. It involves investment in infrastructure, digital literacy programs, professional development, policy reforms, equitable access initiatives, and research to support evidence-based practices. Overcoming these barriers is essential to ensure educational transformation that prepares learners for success in the 5.0 society.

#### Addressing Issues of Curriculum Relevance and Adaptability

The importance of addressing concerns related to the relevance and flexibility of curriculum cannot be overstated in the context of the 5.0 society. It is essential to guarantee that education is in sync with the ever-evolving requirements of learners and the swiftly changing global landscape. There are several ways that may be used to tackle these concerns, one of which is the implementation of a consistent and methodical approach to curriculum evaluation to guarantee its pertinence and flexibility. Incorporating varied viewpoints and new trends in the review process may be achieved by actively involving educators, experts, industry professionals, and stakeholders (Mian et al., 2020). Consider feedback from students, parents, and the wider community to reflect their needs and aspirations. There is a need to advocate for the promotion of flexibility and customisation within the curriculum in order to effectively address the different requirements, interests, and objectives of learners. Offer students the chance to choose from a range of optional courses or create customized learning paths. Place emphasis on interdisciplinary methodologies that foster the amalgamation of knowledge and proficiencies from diverse academic domains (VanTassel-Baska & Baska, 2021).

To adequately equip pupils for the forthcoming 5.0 society, it is essential to include futureoriented abilities inside the curriculum. The integration of several competences, including critical

thinking, creativity, problem-solving, digital literacy, communication, teamwork, adaptation, cultural intelligence, and entrepreneurship, is essential in contemporary academic settings (Carayannis &

Morawska-Jancelewicz, 2022). Ensure that the curriculum addresses emerging trends, such as artificial intelligence, sustainability, and global citizenship. Enhance real-world linkages via the incorporation of genuine, pragmatic, and hands-on learning activities into the curriculum. Integrate academic instruction with real-world applications, contemporary societal developments, and pertinent local or global concerns (Nguyen et al., 2020). Facilitate internships, community projects, and partnerships with industry, organizations, and community leaders to provide hands-on experiences and expose students to real-world challenges and opportunities.

Integrate technology into the curriculum to augment its relevance and flexibility. Incorporate digital tools, platforms, and resources that facilitate interactive and immersive learning experiences (Castro, 2019). Place a strong emphasis on the development of digital literacy, coding proficiency, data analytic capabilities, and information literacy skills. This paper aims to investigate the potential of new technologies, including virtual reality, augmented reality, and artificial intelligence, in augmenting learning possibilities. To foster tolerance and provide students with the necessary skills to thrive in an increasingly varied global society, it is imperative to integrate global and cultural views into the curriculum (Association, 2020). By doing so, educational institutions may create an environment that embraces and celebrates diversity, while also preparing students to navigate and engage with other cultures and ideas. The incorporation of multicultural literature, global challenges, and diverse viewpoints from other cultures and places should be included. Facilitate the cultivation of intercultural understanding, empathy, and respect by means of engaging in cross-cultural experiences and fostering discourse.

The curriculum should prioritize the development of lifelong learning abilities, enabling students to cultivate adaptability, self-directed learning, and the ongoing acquisition of new information and skills (Cutrer et al., 2021). The integration of inquiry-based learning, research skills, self-directed learning, and metacognitive methods is a crucial aspect to consider in educational settings. Promote the cultivation of an affinity for acquiring knowledge, inquisitiveness, and the adoption of a mentality that embraces personal development and progress. Enhance collaborative and problem-solving abilities through implementing project-based learning, engaging in group activities, and fostering cooperative learning (Zhang & Hwang, 2022). Facilitate the provision of collaborative experiences for students, whereby they may engage in group work, tackle intricate difficulties, and effectively use their acquired knowledge and abilities to address practical obstacles in the real world. Promote the cultivation of critical thinking, creativity, effective communication, and collaborative cooperation.

Engage various stakeholders, such as students, parents, educators, industry experts, and community members, in the process of curriculum creation (Chavula et al., 2022). Request their

involvement, comments, and participation to ensure that the curriculum aligns with their specific needs and expectations. Facilitate the active involvement of regional industries and organizations in order to solicit their valuable insights about the requisite competencies and expertise demanded by the labour market. It is important to consistently assess the efficacy of the curriculum in addressing the requirements of learners and the challenges posed by the 5.0 society (Oktaviana et al., 2022). The process involves the collection of data, the gathering of feedback, and the conduction of assessments to evaluate the influence of the curriculum on the achievement of student learning outcomes. Utilize the discovered results to guide and enhance continuous revisions and advancements. Using these measures, educational institutions may effectively guarantee that the curriculum maintains its relevance, adaptability, and responsiveness to the evolving requirements of learners and the quickly changing society of the fifth industrial revolution. The educational system facilitates the acquisition of information, skills, and competences necessary for future success and the advancement of society.

#### **Opportunities for Collaboration and Partnership Among Stakeholders**

The establishment of collaboration and partnerships among stakeholders is crucial in facilitating the process of educational reform within the context of the 5.0 society (Ghobakhloo et al., 2023). Through collaborative efforts, stakeholders have the ability to use their specialized knowledge, available resources, and combined endeavours to generate significant and enduring change. One potential avenue for cooperation and partnership is the cultivation of relationships between educational institutions at the K-12 level and universities, with the aim of bridging the divide between primary and secondary education and tertiary education. In order to facilitate a smooth transition for students, it is essential to establish articulation agreements, joint programs, and dual enrollment possibilities. These initiatives aim to provide seamless educational routes for those seeking to further their education. Promote the dissemination of information, research findings, and exemplary methodologies across other institutions (Penuel et al., 2020).

Promote the establishment of partnerships between educators and researchers in order to facilitate the integration of theoretical concepts with practical applications (Penuel et al., 2020). Researchers have the capacity to provide evidence-based insights and give assistance to educators in the implementation of novel ways. Educational professionals have the capacity to provide significant insights and practical viewpoints, so informing the establishment of research priorities and facilitating the application of research outcomes into tangible initiatives. Promote collaborative endeavours between the public and private sectors to augment educational opportunities and resources (Johnson et al., 2019). Encourage the involvement of business enterprises, foundations, and institutions in endorsing educational endeavours by offering financial resources, technological advancements, specialized knowledge, and guidance. Engage in collaborative efforts pertaining to the design and

implementation of educational programs, resources, and research initiatives aimed at addressing pertinent societal requirements.

Engage in collaborative partnerships with community groups and nonprofit entities to enhance educational experiences outside the confines of the traditional classroom setting (Miranda et al., 2021). Participate in collaborative endeavors that provide supplementary programs, guidance, and assistance to students. Collaborate with specialized groups in domains such as arts, sports, community development, or social services to augment the educational milieu. Enhance collaborative alliances with parents and families in order to create a nurturing educational milieu (Yildiz, 2021). Incorporate parental participation in decision-making procedures, advisory committees, and the governance of educational institutions. Offer a range of materials, seminars, and training programs aimed at facilitating parental engagement in their children's educational pursuits. Promote and facilitate effective channels of communication and collaborative efforts in order to establish a collective dedication towards the achievement of student success.

One potential strategy to enhance the alignment between education and workforce demands is to foster collaboration between educational institutions and industry (Miranda et al., 2021). Incorporate employers into the process of curriculum creation, internships, and apprenticeship programs to facilitate the provision of authentic experiences and pertinent skills to students. To address the disparity between education and the labor market, it is imperative to form collaborative alliances with industry groups, professional organizations, and trade unions. Collaborate with governmental entities and policymakers to exert influence on educational policies and enact improvements (Morgan et al., 2021). Engage in collaborative efforts pertaining to the creation of curriculum, assessments, financing, and enhancements to infrastructure. I strongly advocate for the implementation of policies that facilitate educational innovation, promote fairness, and address the requirements of the 5.0 society. By actively embracing these chances for cooperation and partnership, stakeholders have the ability to establish a holistic and linked educational ecosystem that effectively leverages the potential for good impact and adequately prepares learners for success in the society of the fifth industrial revolution.

# The Role of Policymakers and Educational Institutions

### Policy Implications for the 5.0 Society

The emergence of the 5.0 society poses distinctive difficulties and possibilities, necessitating the implementation of legislative measures to guarantee a prosperous and fair future. Several policy implications arise from the concept of a 5.0 society. One such consequence is the need for policies that prioritize the creation of a curriculum that is aligned with the demands of the future. This curriculum should effectively include essential skills for the 21st century, including digital literacy, critical thinking, creativity, and social-emotional learning (Sukasih, 2021). The curriculum need to possess

qualities of flexibility, adaptability, and responsiveness in order to effectively address evolving trends, technologies, and global concerns.

It is imperative that policies place a high priority on ensuring equal access to technology and internet infrastructure, with a special focus on addressing the needs of underserved communities (Chan, 2023). It is imperative for governments to provide resources towards the expansion of broadband access, provision of gadgets to schools, and guaranteeing digital inclusion for all individuals. Policies need to also foster the cultivation of responsible and ethical use of technology, while simultaneously tackling concerns pertaining to privacy and data security. Policies must to be designed in a manner that facilitates the advancement of lifelong learning and reskilling possibilities, with the aim of equipping people to effectively respond to the changing demands of the 5.0 society (Eynon & Young, 2020). It is essential for governments to provide resources towards the implementation of professional development initiatives for educators, as well as to ensure the availability and affordability of upskilling and reskilling opportunities for employees, in order to effectively respond to the evolving demands of the labor market.

Governments may provide an enabling environment for educational reform, technological improvements, and social growth in the 5.0 society via the implementation of these policy implications. These policies have the potential to equip people with the necessary skills and abilities to succeed in a dynamic and evolving global environment, while simultaneously promoting principles of inclusion, sustainability, and creativity.

## **Educational Reforms and Initiatives**

In order to facilitate educational transformation within the context of the 5.0 society, it is possible to introduce a range of significant educational reforms and initiatives (Voronkova et al., 2023). The primary objective of these changes is to improve the overall quality, pertinence, and fairness of education. To attain this objective, the implementation of individualized learning methodologies that accommodate the unique requirements, interests, and skills of individual students is vital (Tzenios, 2020). Utilize technological advancements to provide customized training, adaptive evaluations, and personalized learning trajectories. To cultivate a sense of ownership in the learning process, it is essential to advocate for student agency and self-directed learning.

Place a strong emphasis on project-based learning, when students actively participate in realworld, multidisciplinary initiatives (Giang, 2021). This methodology promotes the development of critical thinking skills, problem-solving abilities, collaborative aptitude, and creative thinking. Students engage in meaningful and relevant activities that are aligned with their own interests and contribute to addressing societal or global issues. The adoption of a competency-based education model entails a shift away from conventional time-based frameworks, instead prioritizing the acquisition of particular information, skills, and abilities as the basis for progression (Wabwire, 2023). Students demonstrate

individualized development, prioritizing comprehensive comprehension and practical application of subjects prior to advancing to subsequent levels. Integrating global citizenship education into the curriculum serves to enhance students' comprehension of worldwide matters, cultural plurality, and their ability to engage effectively in intercultural interactions (Guo-Brennan & Guo-Brennan, 2020). This initiative aims to foster empathy, uphold human rights, promote environmental sustainability, and encourage active engagement in tackling global concerns.

Enhance career and technical education initiatives to provide students with pragmatic competencies and training that align with industry demands (Craps et al., 2022). Engage in partnerships with nearby firms and industries to facilitate the creation of educational programs, facilitate the provision of internships, and facilitate the availability of apprenticeship positions. The incorporation of digital literacy into the curriculum is crucial in order to provide students with the necessary abilities required for functioning effectively in a society characterized by the advent of the 5.0 society (Yamada, 2021). The curriculum should include the instruction of responsible digital citizenship, online safety, information literacy, coding, and data analysis. It is essential to provide a fair and balanced opportunity for everyone to utilize technology, while also fostering the integration of technology across many academic disciplines. Incorporate social and emotional learning throughout the curriculum in order to cultivate self-awareness, self-management, social awareness, relational skills, and responsible decisionmaking (Paolini, 2019). In order to foster positive character development, it is essential to use specific instructional strategies, provide supportive surroundings, and provide many opportunity for reflection. It is imperative to place a high emphasis on continuous professional development for educators in order to provide them with the requisite information, skills, and attitudes essential for facilitating educational reform (Admiraal et al., 2021). Provide training programs that focus on new pedagogical approaches, the integration of technology in education, the development of cultural competency, and the enhancement of social-emotional learning skills. Promote the establishment of communities of practice and foster a culture of collaborative learning among educators.

The implementation of educational reforms and initiatives has the potential to empower learners, stimulate innovation and creativity, advance fairness, and guarantee that education stays relevant and adaptable to the demands of the 5.0 society. Through the implementation of these changes, education systems may enhance their ability to adequately equip students with the necessary skills and knowledge to effectively navigate the dynamic and evolving landscape of the contemporary world.

## **Teacher Professional Development for the 5.0 Society**

Teacher professional development plays a critical role in preparing educators for the demands of the 5.0 society (Admiraal et al., 2021). There are key areas to focus on for teacher professional development such as training and support for teachers to effectively integrate technology into their instructional practices. Offer workshops, courses, and coaching on using educational software, digital tools, online

learning platforms, and collaborative technologies. Emphasize pedagogical strategies for leveraging technology to enhance student engagement, personalized learning, and critical thinking skills.

Equip teachers with the necessary skills and knowledge to cultivate future-oriented skills in students (Kilag et al., 2023). Offer professional development on fostering creativity, critical thinking, problem-solving, collaboration, communication, and digital literacy. Provide training on incorporating project-based learning, inquiry-based approaches, and real-world connections into the curriculum. Support teachers in integrating SEL into their classrooms to promote students' emotional well-being, social skills, and resilience (D'Emidio-Caston, 2019). Offer professional development on social and emotional learning (SEL) frameworks, strategies for fostering positive classroom environments, and techniques for incorporating SEL into daily instruction. Provide training on conflict resolution, empathy, and culturally responsive practices.

Provide professional development on culturally responsive teaching practices to help teachers create inclusive and equitable classrooms (O'Leary et al., 2020). Offer training on understanding students' cultural backgrounds, addressing biases, and integrating diverse perspectives into instruction. Provide strategies for building positive relationships with students from diverse backgrounds and supporting their academic success. Train teachers in adaptive instruction and differentiation techniques to meet the diverse needs of students in the 5.0 society (Umamah et al., 2020). Offer professional development on strategies for differentiating instruction, modifying assessments, and scaffolding learning for students with varied abilities and learning styles. Provide support for individualized instruction and personalized learning approaches. Equip teachers with the knowledge and skills to foster global competence and intercultural understanding in students (Kerkhoff & Cloud, 2020). Offer professional development on global issues, cultural competency, and integrating global perspectives into the curriculum. Facilitate opportunities for teachers to engage in international collaborations and experiences.

Provide professional development opportunities for teachers to develop leadership skills and become advocates for educational transformation (Bonfield et al., 2020). Offer training on instructional leadership, mentoring, and teacher-led initiatives. Support teachers in becoming change agents who can drive innovation and advocate for policies and practices that benefit students in the 5.0 society. By investing in teacher professional development in these areas, education systems can empower educators to effectively navigate the challenges and opportunities of the 5.0 society. Continuous support and training enable teachers to enhance their instructional practices, foster student success, and contribute to educational transformation.

# Conclusion

The emergence of the 5.0 society poses distinctive difficulties and possibilities within the realm of education. The key conclusions derived from the debate indicate that the establishment of inclusive

and supportive learning environments is crucial for empowering all students and fostering their academic and socio-emotional development (Mahfud & Riniati, 2023). The implementation of the 5.0 society calls for the implementation of curriculum changes that place emphasis on the prioritization of relevance, flexibility, and the integration of skills that are geared towards future needs. The establishment of collaborative relationships and collaborations among many stakeholders is of utmost importance in facilitating educational reform and effectively addressing the difficulties posed by the advent of the 5.0 society (Mourtzis et al., 2022). The policy implications include several areas such as curricular changes, integration of technology, promoting equality, conducting research, and fostering cooperation. These implications aim to facilitate the educational transition required in the context of the 5.0 society.

Education plays a crucial role in facilitating the functioning of people in the 5.0 society by providing them with the essential information, skills, and competences required to excel in a swiftly changing global landscape (Poláková et al., 2023). There are many significant factors that underscore the significance of education, particularly in terms of equipping people with the necessary skills to successfully traverse and harness technology in the context of the 5.0 society. The cultivation of digital literacy, critical thinking, and problem-solving abilities facilitates the acquisition of knowledge and proficiency in developing technologies, empowering people to comprehend and effectively use them. Education provides individuals with the necessary skills and knowledge to effectively navigate and use technology changes, so enabling them to maximize their personal and professional development.

In essence, education serves as a potent instrument that enables people to effectively negotiate the intricacies inherent in a society characterized by a 5.0 paradigm. The educational program provides learners with the necessary information, skills, and values to effectively engage with technology breakthroughs, make meaningful contributions to global concerns, promote well-being, address disparities, and actively participate in crafting a sustainable and inclusive future.

#### References

- Adarkwah, M. A. (2021). "I'm not against online teaching, but what about us?": ICT in Ghana post Covid-19. Education and Information Technologies, 26(2), 1665–1685.
- Admiraal, W., Schenke, W., De Jong, L., Emmelot, Y., & Sligte, H. (2021). Schools as professional learning communities: what can schools do to support professional development of their teachers? Professional Development in Education, 47(4), 684–698. https://doi.org/10.1080/19415257.2019.1665573
- Almazova, N., Krylova, E., Rubtsova, A., & Odinokaya, M. (2020). Challenges and opportunities for Russian higher education amid COVID-19: Teachers' perspective. Education Sciences, 10(12), 368.

- Ardoin, N. M., Bowers, A. W., & Gaillard, E. (2020). Environmental education outcomes for conservation: A systematic review. Biological Conservation, 241, 108224. https://doi.org/https://doi.org/10.1016/j.biocon.2019.108224
- Association, A. O. T. (2020). Educator's Guide for Addressing Cultural Awareness, Humility, and Dexterity in Occupational Therapy Curricula. The American Journal of Occupational Therapy, 74(Supplement\_3), 7413420003p1-7413420003p19. https://doi.org/10.5014/ajot.2020.74S3005
- Bonfield, C. A., Salter, M., Longmuir, A., Benson, M., & Adachi, C. (2020). Transformation or evolution?: Education 4.0, teaching and learning in the digital age. Higher Education Pedagogies, 5(1), 223–246. https://doi.org/10.1080/23752696.2020.1816847
- Bragg, L. A., Walsh, C., & Heyeres, M. (2021). Successful design and delivery of online professional development for teachers: A systematic review of the literature. Computers & Education, 166, 104158. https://doi.org/10.1016/j.compedu.2021.104158
- Broo, D. G., Kaynak, O., & Sait, S. M. (2022). Rethinking engineering education at the age of industry 5.0. Journal of Industrial Information Integration, 25, 100311.
- Carayannis, E. G., & Morawska-Jancelewicz, J. (2022). The futures of Europe: Society 5.0 and Industry 5.0 as driving forces of future universities. Journal of the Knowledge Economy, 1–27.
- Castro, R. (2019). Blended learning in higher education: Trends and capabilities. Education and Information Technologies, 24(4), 2523–2546. https://doi.org/10.1007/s10639-019-09886-3
- Chan, C. K. Y. (2023). A comprehensive AI policy education framework for university teaching and learning. International Journal of Educational Technology in Higher Education, 20(1), 38. https://doi.org/10.1186/s41239-023-00408-3
- Charteris, J., & Smardon, D. (2019). Student voice in learning: Instrumentalism and tokenism or opportunity for altering the status and positioning of students? Pedagogy, Culture & Society, 27(2), 305–323.
- Chavula, M. P., Zulu, J. M., & Hurtig, A.-K. (2022). Factors influencing the integration of comprehensive sexuality education into educational systems in low- and middle-income countries: a systematic review. Reproductive Health, 19(1), 196. <u>https://doi.org/10.1186/s12978</u>022-01504-9
- Craps, S., Pinxten, M., Knipprath, H., & Langie, G. (2022). Different roles, different demands. A competency-based professional roles model for early career engineers, validated in industry and higher education. European Journal of Engineering Education, 47(1), 144–163. https://doi.org/10.1080/03043797.2021.1889468

- Cutrer, W. B., Spickard, W. A., Triola, M. M., Allen, B. L., Spell, N., Herrine, S. K., Dalrymple, J. L., Gorman, P. N., & Lomis, K. D. (2021). Exploiting the power of information in medical education. Medical Teacher, 43(sup2), S17–S24. https://doi.org/10.1080/0142159X.2021.1925234
- Debnam, K. J., Milam, A. J., Bottiani, J. H., & Bradshaw, C. P. (2021). Teacher-student incongruence in perceptions of school equity: Associations with student connectedness in middle and high schools. Journal of School Health, 91(9), 706–713.
- D'Emidio-Caston, M. (2019). Addressing Social, Emotional Development, and Resilience at the Heart of Teacher Education. Teacher Education Quarterly, 46(4), 116–149. https://www.jstor.org/stable/26841579
- Dolph, D. (2017). Resistance to Change: A Speed Bump on the Road to School Improvement?. Journal of Educational Leadership and Policy Studies, 1(1), 6–20.
- Elias, M. J. (2019). What if the doors of every schoolhouse opened to social-emotional learning tomorrow: Reflections on how to feasibly scale up high-quality SEL. Educational Psychologist, 54(3), 233–245.
- Eynon, R., & Young, E. (2020). Methodology, Legend, and Rhetoric: The Constructions of AI by Academia, Industry, and Policy Groups for Lifelong Learning. Science, Technology, & Human Values, 46(1), 166–191. https://doi.org/10.1177/0162243920906475
- Ghobakhloo, M., Iranmanesh, M., Morales, M. E., Nilashi, M., & Amran, A. (2023). Actions and approaches for enabling Industry 5.0-driven sustainable industrial transformation: A strategy roadmap. Corporate Social Responsibility and Environmental Management, 30(3), 1473–1494. https://doi.org/https://doi.org/10.1002/csr.2431
- Giang, N. N. (2021). Project-Based Learning on the Topic of Aromatic Wax Production. Journal of Education and E-Learning Research, 8(4), 395–407.
- Guo-Brennan, L., & Guo-Brennan, M. (2020). Global Citizenship Education and Social Justice for Immigrant Students: Implications for Administration, Leadership, and Teaching in Schools. In R. Papa (Ed.), Handbook on Promoting Social Justice in Education (pp. 2203–2222). Springer International Publishing. https://doi.org/10.1007/978-3-030-14625-2\_40
- Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the role of digital technologies in education: A review. Sustainable Operations and Computers, 3, 275–285. https://doi.org/https://doi.org/10.1016/j.susoc.2022.05.004
- Hamilton, L., & Gross, B. (2021). How Has the Pandemic Affected Students' Social-Emotional WellBeing? A Review of the Evidence to Date. Center on Reinventing Public Education.

- Johnson, C., Tilt, J. H., Ries, P. D., & Shindler, B. (2019). Continuing professional education for green infrastructure: Fostering collaboration through interdisciplinary trainings. Urban Forestry & Urban Greening, 41, 283–291. https://doi.org/https://doi.org/10.1016/j.ufug.2019.04.021
- Kerkhoff, S. N., & Cloud, M. E. (2020). Equipping teachers with globally competent practices: A mixed methods study on integrating global competence and teacher education. International Journal of Educational Research, 103, 101629. https://doi.org/https://doi.org/10.1016/j.ijer.2020.101629
- Kilag, O. K., Miñoza, J., Comighud, E., Amontos, C., Damos, M., & Abendan, C. F. (2023).
  Empowering Teachers: Integrating Technology into Livelihood Education for a Digital Future.
  Excellencia: International Multi-Disciplinary Journal of Education, 1(1), 30–41.
- Lateef, F. (2020). Maximizing learning and creativity: understanding psychological safety in simulationbased learning. Journal of Emergencies, Trauma, and Shock, 13(1), 5.
- Mahfud, M., & Riniati, W. O. (2023). Exploring the Role of Teacher-Student Relationships in Academic Achievement: A Qualitative Study in Primary Schools. The Eastasouth Journal of Learning and Educations, 1(02), 76–83.
- Mavrodieva, A. V, & Shaw, R. (2020). Disaster and climate change issues in Japan's Society 5.0—A discussion. Sustainability, 12(5), 1893.
- Mian, S. H., Salah, B., Ameen, W., Moiduddin, K., & Alkhalefah, H. (2020). Adapting universities for sustainability education in industry 4.0: Channel of challenges and opportunities. Sustainability, 12(15), 6100.
- Miranda, J., Navarrete, C., Noguez, J., Molina-Espinosa, J.-M., Ramírez-Montoya, M.-S., Navarro-Tuch, S. A., Bustamante-Bello, M.-R., Rosas-Fernández, J.-B., & Molina, A. (2021). The core components of education 4.0 in higher education: Three case studies in engineering education.
  Computers & Electrical Engineering, 93, 107278. https://doi.org/https://doi.org/10.1016/j.compeleceng.2021.107278
- Morgan, D. L., Rall, R. M., Commodore, F., Fischer, R. A., & Bernstein, S. (2021). Hiding in Plain Sight: The Potential of State-Level Governing Boards Postsecondary Education Policy Agenda-Setting. The Journal of Higher Education, 92(4), 570-595. https://doi.org/10.1080/00221546.2020.1824885
- Mourtzis, D., Angelopoulos, J., & Panopoulos, N. (2022). A Literature Review of the Challenges and Opportunities of the Transition from Industry 4.0 to Society 5.0. Energies, 15(17), 6276.
- Nguyen, T. P. L., Nguyen, T. H., & Tran, T. K. (2020). STEM education in secondary schools: Teachers' perspective towards sustainable development. Sustainability, 12(21), 8865.

- Oktaviana, D., Barizi, A., & Yaqin, M. Z. N. (2022). The Challenges of the society 5.0 era: The evaluation of learning in primary education. Al Adzka: Jurnal Ilmiah Pendidikan Guru Madrasah Ibtidaiyah, 12(1).
- O'Leary, E. S., Shapiro, C., Toma, S., Sayson, H. W., Levis-Fitzgerald, M., Johnson, T., & Sork, V. L. (2020). Creating inclusive classrooms by engaging STEM faculty in culturally responsive teaching workshops. International Journal of STEM Education, 7(1), 32. https://doi.org/10.1186/s40594-020-00230-7
- Oleson, K. C. (2023). Promoting inclusive classroom dynamics in higher education: A research-based pedagogical guide for faculty. Taylor & Francis.
- Paolini, A. (2019). Social Emotional Learning: Role of the School Counselor in Promoting College and Career Readiness. Anatolian Journal of Education, 4(1), 1–12.
- Penuel, W. R., Riedy, R., Barber, M. S., Peurach, D. J., LeBouef, W. A., & Clark, T. (2020). Principles of Collaborative Education Research With Stakeholders: Toward Requirements for a New Research and Development Infrastructure. Review of Educational Research, 90(5), 627–674. https://doi.org/10.3102/0034654320938126
- Philipsen, B., Tondeur, J., Pareja Roblin, N., Vanslambrouck, S., & Zhu, C. (2019). Improving teacher professional development for online and blended learning: A systematic meta-aggregative review. Educational Technology Research and Development, 67, 1145–1174.
- Poláková, M., Suleimanová, J. H., Madzík, P., Copuš, L., Molnárová, I., & Polednová, J. (2023). Soft skills and their importance in the labour market under the conditions of Industry 5.0. Heliyon, 9(8), e18670. https://doi.org/https://doi.org/10.1016/j.heliyon.2023.e18670
- Rodríguez-Abitia, G., & Bribiesca-Correa, G. (2021). Assessing digital transformation in universities. Future Internet, 13(2), 52.
- Statti, A., & Torres, K. M. (2020). Digital literacy: The need for technology integration and its impact on learning and engagement in community school environments. Peabody Journal of Education, 95(1), 90–100.
- Sukasih, S. (2021). Digital Literation and Development Emotional Social Skills at Elementary School Students in The Social Era 5.0. Proceeding, 17–26.
- Tolarba, J. E. L. (2021). Virtual simulation in nursing education: a systematic review. International Journal of Nursing Education, 13(3), 48–54.
- Treve, M. (2021). What COVID-19 has introduced into education: challenges Facing Higher Education Institutions (HEIs). Higher Education Pedagogies, 6(1), 212–227. https://doi.org/10.1080/23752696.2021.1951616

- Tzenios, N. (2020). Clustering Students for Personalized Health Education Based on Learning Styles. Sage Science Review of Educational Technology, 3(1), 22–36. https://journals.sagescience.org/index.php/ssret/article/view/22
- Umamah, N., Sumardi, Marjono, & Hartono, F. P. (2020). Teacher Perspective: Innovative, Adaptive, and Responsive Instructional Design Aimed at Life Skills. IOP Conference Series: Earth and Environmental Science, 485(1), 012083. https://doi.org/10.1088/1755-1315/485/1/012083
- VanTassel-Baska, J., & Baska, A. (2021). Curriculum planning and instructional design for gifted learners. Routledge.
- Viac, C., & Fraser, P. (2020). Teachers' well-being: A framework for data collection and analysis.
- Voronkova, V., Nikitenko, V., & Vasyl'chuk, G. (2023). Foreign Experience In Implementing Digital Education In The Context Of Digital Economy Transformation. Baltic Journal of Economic Studies, 9(3), 56–65.
- Wabwire, J. (2023). Critical Issues Surrounding Competency-Based Education in the Digital Age: The "Wickedness Narrative of the Problem." In Competence-Based Curriculum and E-Learning in Higher Education (pp. 199–215). IGI Global.
- Yamada, A. (2021). Japanese Higher Education: The Need for STEAM in Society 5.0, an Era of Societal and Technological Fusion. Journal of Comparative and International Higher Education, 13(1), 44–65.
- Yamada, A. (2023). Cultivating Future Competencies Through Interdisciplinary Education in the Society 5.0 Era. In Transformation of Higher Education in the Age of Society 5.0: Trends in International Higher Education (pp. 37–52). Springer.
- Yildiz, N. G. (2021). An Investigation of School Counselors' Role in Building Partnerships with Linguistically Diverse Families. International Journal of Curriculum and Instruction, 13(3), 2386–2415.
- Zhang, D., & Hwang, G.-J. (2022). Effects of Interaction between Peer Assessment and ProblemSolving Tendencies on Students' Learning Achievements and Collaboration in Mobile Technology-Supported Project-Based Learning. Journal of Educational Computing Research,

61(1), 208–234. https://doi.org/10.1177/07356331221094250