Concept of Learning in the Era of Society 5.0: Integration of Technology, Humanism, and Educational Transformation

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ABSTRACT
Today's global developments mark a shift toward the era of Society 5.0, a concept of society that integrates intelligent technology with humanistic values. This transformation has significant implications for the world of education, particularly in shaping a new paradigm for the concept of learning. This study aims to analyse the concept of learning in the *Society 5.0 era* through a qualitative approach with a literature study method. Data were collected from academic literature, journal articles, and relevant educational theories, then analysed using content analysis techniques. The results of the study show that the concept of learning in the *Society 5.0* era is an integration of three main approaches: *constructivism*, *connectivism*, and *humanistic learning*. *Constructivist* theory emphasises the active involvement of students in building knowledge, *connectivism* explains the importance of digital networks as a source of learning, while *humanistic learning* ensures a balance between technological sophistication and human values. The implications of this study include the need for an adaptive curriculum, *as well as blended learning and project-based learning models, and* a shift in the role of teachers to facilitators and mentors. Thus, the concept of learning in the Society 5.0 era can be formulated as a learning process that is both technological and human-centred, where technology serves as a means of human empowerment. This article makes a theoretical contribution to the development of 21st-century education and offers practical guidance for formulating education policies that address global demands.

Keywords: Society 5.0, Learning Concept, Constructivism, Connectivism, Humanistic Learning, 21st Century Education

INTRODUCTION

The development of the current global society has entered the phase of Society 5.0, which is interpreted as a new paradigm that focuses on the integration of digital technology with humanist values (Zawacki-Richter et al., 2019). This concept is offered in response to the challenges of Industrial Revolution 4.0, which often prioritises technology without considering its social impact. Therefore, a system is needed that places humans at the centre of civilisational development (Xu et al., 2023; Buragohain et al., 2025). In the context of education, Society 5.0 requires a learning model that not only prioritises technical knowledge but also the skills needed to face the challenges of the 21st century, such as creativity, critical thinking, and collaboration (Fajaruddin et al., 2024; Wang et al., 2024; Tuma, 2021).

Education in the era of Society 5.0 is characterised by a shift from traditional learning methods to approaches that utilise intelligent technologies such as artificial intelligence, big data, and the Internet of Things (IoT) (Zhang, 2024). The theory of connectivism, developed by Siemens, shows relevance in explaining the learning process in this digital age, where knowledge is distributed and individuals are required to access and connect information in a practical way (Hills et al., 2023; Truskavetska et al., 2024; Batanero et al., 2022). Therefore, the learning process must be able to adapt to the ever-changing technological developments, as well as enrich the student learning experience.

The humanistic learning approach is also critical in the context of Society 5.0, because mastery of technology must be in line with the development of human values, empathy, and social responsibility (Allison, 2025). Education should collaborate with technology as a tool

to strengthen the character of students, so that graduates are not only competent in academic matters but also have high social awareness (Coolsaet, 2024; Li & Jiang, 2021). This confirms that students are expected to be not only technically skilled, but also able to empathise and understand the social impact of the application of technology in daily life.

This transformation of the learning concept has significant implications for Indonesia's education system. In the midst of the high-tech era, the role of teachers as knowledge conveyors needs to change into facilitators who help students develop digital literacy and utilise technology wisely (Akrami et al., 2024; Mitha & Omarsaib, 2024; Callaghan et al., 2022). As a result, research on learning methods in the context of Society 5.0 is becoming increasingly important, especially in designing adaptive curricula, relevant learning methods, and effective evaluation strategies (Kiong, 2023; Ritonga et al., 2024; Feser, 2024). With the right approach, education can give birth to a generation that is not only able to adapt quickly but also contribute positively in an increasingly complex society.

RESEARCH METHODS

This research utilises a descriptive qualitative approach through the literature review method to understand the concept of learning in the era of Society 5.0. This method was chosen because it allows for an in-depth exploration of various educational theories, scientific literature, and relevant previous research results (Ursula, 2024; Destéfano et al., 2024; Nuryadin et al., 2024). Literature studies themselves, as expressed by Zed (Singh et al., 2021), are techniques for gathering information from various written sources, which help researchers gain an in-depth understanding of current issues, including in the transformation of education in the digital and humanistic era (Saputri et al., 2024; Nuryadin et al., 2024; Kustinah et al., 2022). By utilising the existing literature, this study aims to develop a conceptual framework that can capture the evolution of learning methods that are in accordance with the demands of the times (Hsu & Sung, 2025; Taglialatela, 2023; Gedvilienė et al., 2023).

The research stage includes the identification of literature sources that cover various theories, such as connectivism (Taghinezhad et al., 2022), constructivism (Darmawan & Ramli, 2025), and humanistic learning (Lee & Chiang, 2020). After that, the collected literature is grouped into relevant categories, such as learning theory in a digital context (Al-khresheh, 2022), the concept of Society 5.0 in education (Lee et al., 2021), and the integration of technology with humanist values (Klopfer & Aikenhead, 2022). Content analysis was carried out to identify patterns and relationships between the concepts discovered, which will contribute to a broader understanding of the learning concepts necessary for future education (SARKIN & Seçkin, 2023;, (Kustinah et al., 2022; , Bermea, 2022). The results of the analysis were then synthesised to formulate a new understanding relevant to the educational needs of the Society 5.0 era, confirming the importance of a humanistic approach in today's learning (Jerjes, 2024; , Wong et al., 2024; , Jardinez & Natividad, 2024).

RESULTS AND DISCUSSION

1. Transformation of the Learning Concept in the Society Era *5.0*

The results of the literature review show that the concept of learning in the Society 5.0 era has undergone a significant transformation. In the era of Society 4.0, learning emphasises more on the use of digital technology for efficiency, while Society 5.0 focuses on the integration of technology with humanist values. This indicates that advanced technologies such as artificial intelligence (AI), big data, and the Internet of Things (IoT) are used not only

to improve access to information but also to improve the quality of human life and support social sustainability (Saleem et al., 2021; Zhang et al., 2020). This concept is in line with a view that highlights the shift from a productivity-focused approach to one that values human needs and values, although the specific references mentioned earlier do not clearly support this claim.

In the context of education, this transformation is reflected in the change in the learning paradigm from teacher-centered to learner-centered, which is strengthened by smart technology (Herranen et al., 2018). This approach supports the theory of constructivism put forward by Piaget, in which knowledge is actively constructed by learners through learning experiences (Erawati & Adnyana, 2024). In addition, the theory of social constructivism, which integrates social and cultural factors, is increasingly relevant in the context of contemporary learning, given the importance of social interaction in the process of understanding knowledge (Wyatt, 2023).

Thus, a more participatory and interactive learning approach is the key to increasing the effectiveness of learning experiences in today's digital era. The adoption of technology in education not only speeds up the learning process, but also allows for increased student engagement (Tjahjana, 2023). For example, the use of technology-based learning tools that support collaboration and interaction can create a more dynamic and enjoyable learning environment for Generation Z (Cilliers, 2021). Research shows that constructivism-based learning strategies, which include hands-on experience and student active participation, can encourage students to be more engaged and responsible for their own learning (Ye, 2024). Thus, the shift towards more autonomous learning not only improves academic achievement but also prepares students to face challenges in an ever-changing world.

2. Integration of *Connectivism* Theory in Digital Learning

A literature review shows that the theory of connectivityism, introduced by Siemens in 2005, is very relevant in explaining learning practices in the era of Society 5.0. The theory of connectivityism asserts that the learning process occurs not only individually, but also in networks that connect various sources of knowledge, both human and non-human, such as technology Liu & Li (2021) Wu & Cui (2022) Yu (2021). In this context, connectivity is key in understanding how technology-based solutions can strengthen broad knowledge networks and improve social interaction in the learning process Chien et al. (2019).

Network-based digital learning provides opportunities for learners to access a wide range of knowledge and build global connections. With the development of information technology, students can update information in real-time through connected learning platforms Schreurs et al. (2019)Chien et al. (2019). Therefore, connectivity not only underlies technology-based learning practices, but also becomes a cornerstone for the need for digital literacy in the era of Society 5.0, where the ability to connect and interact digitally is increasingly important Wu & Cui (2022)Schreurs et al. (2019).

In the implementation of connected learning, various methods and practices have been built to build learners' capacity to face the challenges of the complex professional world. Through a more collaborative and network-based learning process, learners are expected to develop the skills needed in an increasingly digitally integrated world Wu & Cui (2022)Yu (2021). For example, the application of connectivity-based platforms in educational contexts can encourage more dynamic interactions between learners, thereby enhancing their learning experience and facilitating the creation of new knowledge in social and cultural contexts Chien et al. (2019)Schreurs et al. (2019).

3. Humanism as the Foundation of the Learning Concept

Education in the era of Society 5.0 not only requires high digital skills, but also the cultivation of humanist values. The humanistic learning theory developed by Rogers underscores the importance of emotional aspects, intrinsic motivation, and self-actualisation in education (González-Salamanca et al., 2020). This approach creates individuals who are not only intellectually intelligent, but also have empathy and high social responsibility (Peled, 2020). The integration of humanistic approaches in education is considered essential to develop the socio-emotional skills necessary to actively participate in a modern society loaded with complexity and interconnectedness (Vasilescu et al., 2020).

Project-based learning approaches have begun to be adopted by schools and colleges in response to the social challenges faced in today's digital age (Bejaković & Mrnjavac, 2020). This methodology prioritises real problem-solving, combining digital technology with learning that puts students at the center of the process (Kiryakova & Kozhuharova, 2024). In addition to providing practical skills, these programs also improve students' ability to cooperate and innovate, as well as build social awareness that embodies humanist values (Isabella et al., 2024). Projects that use technology to address real social issues reflect the necessary balance between technological developments and the enhancement of human values that are at the core of Society 5.0 (Štofková et al., 2022).

Furthermore, research shows that the development of 21st century skills, including digital and interpersonal skills, is becoming increasingly important in the context of rapid globalisation (Vodă et al., 2022). When individuals are skilled in utilising digital technology, they become not only effective consumers, but also creators who are able to contribute to society (Ahmad et al., 2019). This confirms that education in this era must focus on developing skills that not only ensure academic success, but also prioritise ethics, social responsibility, and involvement in the community (Alakrash & Razak, 2021; , Reisdorf & DeCook, 2022). This underscores the importance of learning that integrates the values of humanism in the context of technology-oriented education.

4. Implications of the Concept of Learning in the Era *of Society 5.0*

A discussion of the literature on important implications in education in the digital era shows that there is a need to design a curriculum that is adaptive, integrative, and responsive to technological developments. The curriculum must not only focus on the cognitive aspect, but also focus attention on character education which is important for students' moral development (Syaipudin, 2023; Tonge et al., 2023). Research shows that a curriculum that integrates project-based learning and blended learning approaches can increase the attractiveness and effectiveness of learning, providing space for students to develop the character and social skills necessary in daily life (Ahmad et al., 2023; Tonge et al., 2023).

The role of teachers in this changing educational context has also undergone a significant shift. From just conveying information, teachers must now function as facilitators and mentors who contribute to the development of a collaborative learning ecosystem Khor & Mutthulakshmi, 2023; Eden et al., 2024; Yakovleva & Kulikova, 2022). Teachers not only deliver material, but also create a learning environment that supports interaction and collaboration between students, which has been proven to increase active student participation Khor & Mutthulakshmi, 2023; Brod, 2024; Yakovleva & Kulikova, 2022). Research shows that when teachers adopt this role, students are better able to develop independent learning attitudes as well as the social skills needed to work in teams Khor & Mutthulakshmi, 2023; Kim et al., 2024).

Learners' competencies must include digital literacy, creativity, complex problem-solving, and emotional intelligence (Hu & Jin, 2024; (Çevikbaş & Kaiser, 2022; Zhang, 2025). Education that emphasises increasing digital literacy is very important in the midst of the

increasing use of technology in learning. The article mentions that students' communication and collaboration skills are directly related to their ability to utilise technology effectively (Kortsch et al., 2019; He, 2024). Furthermore, students who are trained to think creatively and critically will be more skilled in solving complex problems, which is an important skill in the future world of work (Çevikbaş & Kaiser, 2022; Zhang, 2025).

The applied learning model also needs to adapt to the latest approaches such as blended learning, project-based learning, and personalised learning (Liu & Yuan, 2024; Ambele et al., 2022). In this context, the use of educational technology has been shown to favor personalisation, where students can receive instruction tailored to their individual needs and learning styles (Arango-Ibañez et al., 2024; Khor & Mutthulakshmi, 2023; . Research shows that this approach not only increases student motivation and engagement, but also contributes to better learning outcomes (Makhambetova et al., 2021; Thongchotchat et al., 2023). Therefore, it is very important to continuously evaluate and improve teaching strategies to keep pace with technological developments and the characteristics of students in this digital era (Feng, 2024; Khor & Mutthulakshmi, 2023; Kapoor, 2022).

5. Synthesis Theoretis

In an in-depth study of learning in the era of Society 5.0, it is important to understand that concepts in education must include elements of technology and humanity in a balanced manner. The three main theoretical approaches integrated into this learning include Constructivism, Connectivityism, and Humanistic Learning.

Constructivism emphasises the active role of learners in building their own knowledge. Phenomenal learning occurs when students actively participate in the process, not only as recipients of information but also as collaborators in discovering and compiling knowledge (Yulianti & Herpratiwi, 2024; , Fikriyah et al., 2020). This support provides evidence that interactive environmental support can increase student engagement and build stronger conceptual understanding.

Connectivityism, on the other hand, highlights the importance of digital networks as a source of learning. In this context, technology serves to connect students with vast information resources, expanding their learning horizons (Akihary et al., 2023). A study shows that the application of a project-based learning model that integrates technology can improve students' critical skills and their understanding of complex concepts (Merta et al., 2022).

Humanistic Learning is now increasingly relevant in the era of Society 5.0, which emphasises the human dimension in learning. In this context, emphasis is placed on the development of important human values and social skills, such as empathy and cooperation (Rochmat et al., 2023; , Majid et al., 2023). This is in line with evidence that education that incorporates humanistic aspects can produce individuals who are not only academically capable, but also have the ability to contribute positively to society (Rochmat et al., 2024; , Majid & Fuada, 2020).

Therefore, learning in the era of Society 5.0 must combine all these elements, where technology acts not only as a tool, but as a reinforcement of human interaction. By integrating constructivist, connectivist and humanistic learning, the education of the future can be more relevant and beneficial in shaping individuals who are ready to face the ever-evolving global challenges.

Discussion

First, the concept of learning in the *Society 5.0* era is no longer limited to the transfer of knowledge but rather emphasises students' ability to construct, connect, and apply

information contextually. *Constructivist* theory explains that knowledge is not passively received but actively built by learners through meaningful experiences. In this context, students are expected to become problem solvers who can face the complexities of global challenges with creativity and critical thinking.

Second, the rapid development of digital technology strengthens the relevance of *connectivism*. This theory highlights the importance of learners' capacity to access, manage, and connect information through digital networks. Learning is no longer confined to the classroom but takes place continuously through interaction with global resources available online. This encourages the creation of collaborative, project-based, and adaptive learning models that align with the dynamics of the 21st century.

Third, although technology plays a central role in the *Society 5.0* era, the *humanistic learning* approach remains essential to prevent dehumanisation in education. Learning must still be grounded in human values such as empathy, ethics, and social responsibility. Thus, the concept of learning in this era requires a balance between technological empowerment and the development of students' character. This ensures that education not only produces digitally literate individuals but also fosters empowered, ethical, and socially responsible human beings who can contribute positively to society.

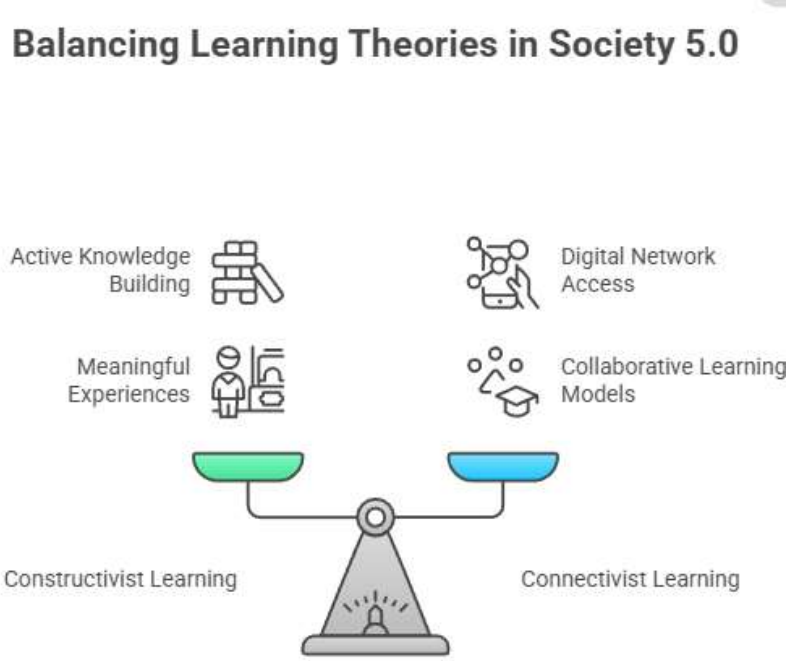

Figure 1. Balancing Learning Theories in Society 5.0

CONCLUSION

This study shows that the concept of learning in the *Society 5.0* era has undergone a fundamental transformation marked by the integration of intelligent technology with humanism values. Learning is no longer understood simply as a process of knowledge transfer, but as a dynamic ecosystem that connects people, technology, and the social environment simultaneously.

The results of the literature review confirm that *constructivism* theory is relevant in emphasising the active role of students in building knowledge, while *connectivism theory* provides a framework to understand digital network-based learning that is characteristic of this era. On the other hand, the theory of *humanistic learning* ensures that technological

developments are kept balanced with the human dimension, so that education functions to form individuals who are not only intellectually intelligent, but also empathetic, ethical, and socially responsible.

Practically, the implications of this research are the need for curriculum design that is adaptive and responsive to technological developments, a learning model that integrates *blended learning* and *project-based learning*, and strengthening the role of teachers as facilitators and mentors. Education in the *era of Society 5.0* must be able to produce a generation that is digitally literate, creative, critical, innovative, and emotionally intelligent.

Thus, the concept of learning in the *era of Society 5.0* can be formulated as a technological and humanist learning process, where technology is used as a means of human empowerment, not as a substitute for human roles. This concept provides a new direction for the development of future education, both theoretically and practically, in order to build a knowledgeable, characterful, and globally competitive society.

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