Ethno Pedagogy Approach in Preparing Science Learning in The Society 5.0 Era

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Abstract: This article is the result of a literature survey on Ethno pedagogy and education in the Society 5.0 era from various sources, including digital books, journal articles, and reports on the internet. In the field of education, Society 5.0 can utilize technology to provide more interactive and personalized learning, such as online learning or the use of Augmented Reality (AR) and Virtual Reality (VR) in learning. This era demands that education must be properly prepared to help individuals develop the skills and knowledge needed to face future challenges. The purpose of this paper is to examine more deeply the ethno-pedagogy approach and how this approach can be applied in preparing education in the Society 5.0 era. The culture-based educational approach is called Ethno pedagogy. The approach is very relevant in preparing education in the increasingly complex and diverse era of Society 5.0. This approach allows teachers to develop learning content that reflects students' cultural values. Technology can be a very useful tool in supporting an ethno-pedagogy approach.

Keywords: Education; Ethnopedagogical approach; Society 5.0

Introduction

The progress of a nation is very dependent on the level of education. A civilized and dignified society is formed through quality human resources, most of which are the result of education. With indicators of experts who are competent, skilled, creative, innovative, productive, and have positive attitudes and behaviors, quality education will be able to develop superior human resources. (Hermawan & Arifin, 2021). Students should be able to acquire the skills needed in the world of work as part of a quality education. This includes both technical and non-technical skills, such as communication skills, problem-solving skills, and managerial abilities (Mainga et al., 2022). These skills must be taught in the context of the world of work and must be relevant to the current and future needs of the world of work. In today's digital era, quality education must also be able to prepare students with skills and knowledge in information and communication technology. This includes the ability to access, analyze

and utilize the information available on the internet (Maqbulin, 2020). In addition, students must also be trained in the ability to adapt to ongoing technological changes.

Even though the Indonesian education system has undergone many curriculum revisions, learning is still expected to include ethno-pedagogical material, with learning activities that emphasize students' local wisdom (Hasan et al., 2021). According to Fauzi & Pratama (2020), local wisdom is a set of ideas and practices that are absorbed, understood, and used by residents while interacting and engaging with their environment. Local knowledge is then translated into a system of values and social norms. Indonesia is a diverse nation in many ways, including its diversity of languages, cultures, customs, and beliefs. The diversity that exists is something that becomes a positive value for the Indonesian state if it can be interpreted properly. Indonesian education must be able to adapt in the Society 5.0 era to produce graduates who are able canin the digital era and with increasingly sophisticated

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technology (Hikmat, 2022). Society 5.0 is a concept that combines technology and people to create a more efficient, inclusive, and sustainable society (Narvaez Rojas et al., 2021).

As a developing country, Indonesia must be able to take advantage of technological developments to improve the quality of education in Indonesia. The existence of Society 5.0 poses challenges in various fields of life, one of which is in the field of education. Education is a very important factor in shaping the current population because it is a tool for developing human potential and increasing the capacity for innovation and adaptation (İsmaiL et al., 2022). However, with significant changes in the way we live and work in the era of Society 5.0, education faces several significant challenges. There are several main challenges facing education in the Society 5.0 era (Purnomo & Herwin, 2021). The first is that education must be inclusive and reach all students, regardless of social and economic background (Ainscow, 2020).

This can be achieved by using digital technology to provide equal access to high-quality education for everyone. Second, education is a means to create a sustainable society (Pauw et al., 2015). Education must prepare students to become innovators and critical thinkers capable of creating solutions to social and environmental problems. They must be trained to become leaders who care about the well-being of our people and our planet. Third, the curriculum must be updated to cover the skills needed in the Society 5.0 era. This includes digital technology skills, social and emotional skills, and leadership and collaboration skills. Fourth, overcoming the digital divide. The biggest challenge facing education in the Society 5.0 era is the digital divide (Drossel et al., 2020). Some regions or countries do not yet have adequate internet access or the necessary equipment to study online.

To overcome this, education must be a top priority and gain support from the government, private organizations, and society as a whole. Overall, these various arguments show that, although education faced many difficulties in the Society 5.0 period, it also presents new potential. Significant, mature, and strategic efforts are needed from regulators, academics, and practitioners to overcome these difficulties. This is done as an effort to create a better educational environment in the era of Society 5.0. The purpose of this writing is to examine more deeply the ethno-pedagogical approach and how this approach can be applied in preparing education in the Society 5.0 era.

Method

This article was created using the findings of a literature review from various sources, including digital books, journals, and other internet-based information about ethno-pedagogical and educational practices in the Society 5.0 period. This article will examine two main topics: Ethnopedagogy Approach, preparing education for the era of Society 5.0. The purpose of this essay is to investigate ethnopedagogy in more detail and show how ethnopedagogy can be used to prepare students for life in the Society 5.0 era.

Result and Discussion

The Essence of Ethnopedagogy

The formation of concepts related to the word ethno, such as ethnopsychology, ethnomusicology, and ethnosos, is analogous to the phenomenon of ethnopedagogy. Ethnopedagogy comes from the word ethno which means a group or community that has a culture, and pedagogy which means the process of educating. Therefore, ethnopedagogy can be interpreted as an educational approach that pays attention to culture as an important factor in the teaching-learning process. As previously stated, ethnopedagogy is a culture-based teaching method. To be incorporated into a pedagogical discipline, Ethno pedagogy seeks to investigate pedagogical components from the perspective of pedagogical sociology (Ercan Gül, 2021).

In the context of Ethno pedagogy, it is important to understand that effective and meaningful ways of learning can vary from one culture to another. Therefore, educators need to understand the culture of their students and take these cultural differences into account in developing effective learning strategies. Ethno pedagogy also studies how educational policies can influence students' cultural and ethnic identities. For example, if the school curriculum focuses on only one culture and ignores other cultures, this can make students from the neglected culture feel unappreciated and uncared for. Therefore, Ethno's pedagogy emphasizes the importance of inclusivity in education. Overall, Ethno pedagogy is very important in understanding how culture and education interrelate and influence one another (Selasih & Sudarsana, 2018). By understanding students' cultural differences and implementing inclusive learning strategies, educators can ensure that the education they provide meets the needs of their students and helps students reach their full potential.

Ethnopedagogical Approach

Local culture-based learning implies designing educational experiences and learning designs that incorporate local culture into the learning process. In local culture-based learning, educators not only introduce academic concepts but also relate these concepts to students' local culture (Fredy et al., 2021). The learning environment is created in local culture-based education to provide students with relevant and

more meaningful learning opportunities. This approach recognizes the existence and importance of local culture as part of student identity and encourages the use of local culture as a valuable learning resource. Local culture-based learning allows students to develop a deeper understanding of their own culture, as well as broaden their understanding of other cultures. This helps students develop self-confidence and respect for cultural diversity.

In practice, local culture-based learning may involve the use of folklore, music, dance, visual arts, and other materials that have local cultural values. This can help students develop social and emotional skills, such as cooperation, courage, and respect for culture. Kumpulainen & Renshaw (2007), says that culture-based learning can be separated into four categories, namely learning about culture, learning with culture, learning through culture, and learning culture. Students have a greater space for learning and development thanks to culture-based learning. Learning can be made more interesting, meaningful, and relevant by taking into account the cultural context and social setting in which it occurs. According to Mebert et al. (2020) to encourage students to apply their knowledge, collaborate with others, and understand how different subjects relate to each other, culture is included as a tool for the learning process. Cultural integration in the learning process can provide many benefits for students. This can motivate them to learn better, work cooperatively, and understand the interrelationships between various subjects.

Following are some of how culture can be integrated into the learning process: Creating an inclusive and multicultural learning environment Introducing the cultures of various ethnic, tribal, or religious groups into a learning environment can help create an inclusive and multicultural environment, using teaching materials related to culture such as folklore, songs or dances can help motivate students to learn better, Encouraging group work and collaboration Encouraging students to work cooperatively in groups can help strengthen linkages between various subjects, Organizing cultural events at school Organizing cultural events at schools such as festivals or exhibitions can help introduce various cultures to students.

Overview of Era 5.0

After the Industrial Revolution 4.0, we were suddenly surprised by the emergence of Society 5.0 because of the bustle brought by the Industrial Revolution 4.0 which was followed by the development of a period of disruption that had not yet subsided. To be precise, on January 23, 2019, Japanese Prime Minister Shinzo Abe delivered a speech at the 2019 World Economic Forum in Davos, Switzerland with the theme "Toward a New Age of "Hope-Driven Economy." With a

system that combines virtual and physical worlds, Society 5.0 provides society with a way to achieve a better balance between economic progress and solving social problems (Potočan et al., 2021). In society 5.0, which is a development of society 4.0, technology is integrated into people's daily lives and is used for more than just sharing information. The Japanese government promotes the idea of Society 5.0. as a future vision to create a more sustainable, inclusive, and humane society.

Improving people's standard of living is one of Society 5.0's goals. by utilizing technology to provide better services in various aspects of life, such as health, education, transportation, and so on. In the field of education, Society 5.0 can utilize technology to provide more interactive and personalized learning, such as online learning or the use of augmented reality (AR) and virtual reality in learning (Sułkowski et al., 2021). The balance between industrial and economic development and the social environment is the basic principle of Society 5.0. This concept emphasizes the importance of developing technology that not only increases efficiency and productivity but also pays attention to wider social and environmental impacts.

In the era of civilization 5.0, technology will be present, which will reduce this problem (Faruqi, 2019). Overall, the goal of Society 5.0 is to create a more digitally integrated society that benefits people, the environment, and the economy sustainably. According to Rahmatullah et al. (2018), a digitally integrated society is a society that makes optimal use of digital technology and data to improve the quality of human life, accelerate economic growth, increase the efficiency of production systems, and create a more sustainable living environment.

Preparing Education in the Era of Society 5.0

The era of the information technology industrial revolution is developing rapidly and affecting every aspect of modern life in the 4.0 era. The emergence of the Internet of Things, which has penetrated many aspects of people's daily life, determined the fourth industrial revolution. One of them works in the education sector. Thus, several initiatives must be carried out, including reviving the curriculum and utilizing appropriate information technology (Emerson et al., 2012). Along with the development of technology, teaching, and learning methods at various levels of education have undergone many changes as a result of the Industrial Revolution 4.0. In this era, learning is no longer limited to physical classrooms where a teacher gives lessons and students listen (Darling-Hammond et al., 2020). Instead, learning becomes more interactive, collaborative, and integrated with technology.

One of the many changes and difficulties that education during the Industrial Revolution 4.0 brought

to teachers was their willingness to use and master technology. According to Dogan et al. (2021), teachers need technology integration skills to achieve this. As a teacher, you must have sufficient digital skills to manage classes and online learning platforms. Teachers must also be able to teach using a variety of relevant educational applications and software (Dogan et al., 2021). The problem for students is that their number is still too large, making it difficult for them to learn, and access to information technology is still uneven. Indonesia, which is still shaken by the turmoil of the fourth industrial revolution, was struck by the idea of Society 5.0. Currently, 4C (Creativity, Critical Thinking, Communication, And Collaboration) is the center of expertise in the field of 21st-century education.

This era demands that education must be properly prepared to help individuals develop the skills and knowledge needed to face future challenges. Several strategies for preparing education in the Society 5.0 era (Rasmuin & Widiani, 2021). First, STEM (Science, Technology, Engineering, and Mathematics) education must be strengthened. Technology is becoming an important aspect of a more advanced society, and STEM education is the foundation needed to cultivate the technological skills and knowledge required by society in the future (Al Asy ari & Rahman, 2020). Schools and universities should strengthen STEM education by providing better curricula and introducing students to the latest technologies. Second, lifelong learning must be encouraged. In the era of Society 5.0, technology and knowledge continue to develop rapidly.

Therefore, individuals must learn throughout life to keep up with changes and progress in various fields. Education is not only limited to the classroom but also involves independent learning involving an understanding of technology and information. Third, technology must be integrated into education. Technology is an important element in the Society 5.0 era and can help students learn the skills needed in the future. The use of online platforms for learning, the use of innovative software and applications, and other technologies such as virtual and augmented reality can enrich students' learning experiences. In addition, technology can also help improve the quality of teaching and facilitate students' access to information and educational resources (Haleem et al., 2022).

Fourth, soft skills must be strengthened. In addition to technical skills, students must also be trained in "soft skills" such as creativity, critical thinking, logical thinking, and communication skills. These skills will help students adapt quickly to the changes taking place in the Society 5.0 era. They can also help students become effective and innovative leaders in the future. Fifth, ethics and social responsibility must be an important focus in education in the era of Society 5.0. Students should be trained in ethics and social responsibility related to the use of technology (Hwang et al., 2023). They must learn about the positive and negative impacts of technology on society and the environment. By understanding the ethics and social responsibility associated with technology, students will become wiser in using technology in the future.

The Ethno pedagogy Approach views culture as a very important aspect of education because culture shapes the mindset and behavior of humans in society (Anwar et al., 2017). Therefore, the ethnopedagogical approach is very relevant in preparing education in the Society 5.0 era. The Era of Society 5.0 is an era in which information and communication technology (ICT) is developing rapidly and influencing many aspects of human life. However, even though ICT is an important factor in the development of society in the era of Society 5.0, the ethnopedagogical approach still views culture as the center of attention in education. This is because culture is the most fundamental aspect in shaping human thought patterns and behavior, so education must be directed at strengthening culture and increasing understanding and appreciation of culture.

To organize education in the Society 5.0 era with an ethnopedagogical approach, several things can be done. First, the curriculum must be developed by taking into account local values and culture in society. This will help students to better understand and appreciate the local culture and develop a sense of love for the motherland. The curriculum must also be designed taking into account technological developments in the Society 5.0 era so that students can understand and use technology wisely. Second, technology can be used to enrich student learning experiences but still has to pay attention to cultural values that exist in society. The use of technology in learning local languages or cultural arts can help students to better understand and appreciate local culture. In addition, technology can also be used as a medium to access information and learn online.

Some areas still lack technology support, so the use of technology in education can be difficult. Therefore, it is necessary to adapt to local situations and conditions, such as using simpler or offline-based technology. In addition, it is also necessary to pay attention to privacy and data security issues in the use of technology in education. Third, extracurricular activities can also be a means to explore and appreciate local culture. Activities such as cultural arts, traditional dance, or cooking traditional food can be a place to introduce local culture to students. Technology can be used to integrate these extracurricular activitiess, students get an interesting and memorable learning experience.

Fourth, parental participation in education is also very important to strengthen cultural education. Parents can play an active role in introducing and preserving local culture to their children. In this case, schools can hold meetings with parents to discuss ways that can be

done to strengthen cultural education. By applying an ethnopedagogical approach in compiling education in the era of Society 5.0, it is hoped that education will be realized which not only enriches knowledge, but also strengthens local cultural values that exist in society. So that by utilizing an ethnopedagogical approach in learning at school, it is hoped that students will have a sense of love for the motherland and customs which are national identity.

Conclusion

Ethno pedagogy is an approach to education that is culturally based. An ethnopedagogical approach is an approach in education that recognizes and pays attention to the diversity of cultures, backgrounds, and experiences of students in the learning process. In the era of Society 5.0 which focuses on the integration of technology and humans to achieve social welfare, the ethnopedagogical approach is becoming increasingly relevant because more and more cultural diversity and values need to be considered in preparing education. In compiling education in the Society 5.0 era with an ethnopedagogical approach, several things can be done. First, the curriculum must be developed by taking into account local values and culture in society. Second, the use of technology to enrich students' learning experiences. Third, extracurriculars are a means to explore and appreciate local culture. Fourth, parental participation in education to strengthen cultural education (Sianturi et al., 2022). The ethnopedagogical approach is very relevant in preparing education in the increasingly complex and diverse era of Society 5.0. This approach allows teachers to develop learning content that reflects students' cultural values. Technology can be a very useful tool in supporting an ethnopedagogical approach and can help students develop critical and creative thinking skills (Cahyana et al., 2020). In education in the era of Society 5.0, it is hoped that education will be realized which not only enriches knowledge but also strengthens local cultural values in society.

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