Development of Digital Competence of MI / SD Students in Facing the Era of Society 5.0

**Annisa Nurul Firdaus[1], Hana Zahid Nur Fadilah[2], Intan Ayu Amalia[3],
Siti Aisyah[4], Mikyal Hardiyati[5]**

[1,2,3,4,5] Universitas Nahdlatul Ulama Purwokerto

Author Correspondence Email: annisanurulfirdaus32@gmail.com

ABSTRACT

The era of society 5.0 is human-centered and technology-based to fulfill the needs of human life. Society 5.0 is the next stage of life evolution after the industrial revolution 4.0 which affects all aspects of human life, including education. This research aims to analyze the development of students' digital competencies in facing the era of society 5.0. The method used in this research is library research. Collection and review of references through various literature related to digital competencies. The results showed that digital competence is the main key in facing the era of society 5.0 so that it can adapt to changing times. The use and utilization of technology wisely and responsibly is a provision for students in learning. Digital competencies that MI / SD students need to have include: basic skills in the use of information and communication technology, critical thinking skills, and student creativity skills.

Keywords: Digital Competencies, Skills, MI / SD Students, Society 5.0

1). INTRODUCTION

The shift from industrial revolution 4.0 to society 5.0 has been the topic of much discussion among scientists. Society 5.0 is a concept initiated by the Japanese government. The concept of society 5.0 is not only limited to manufacturing factors but penetrates the boundaries of social problems with the help of the integration of physical and virtual spaces (Kobelev & Borovik, 2017). Society 5.0 has the concept of big data technology that is collected on the internet and then transformed by Artificial Intelligence (AI) (Nastiti & Abdu, 2020). The presence of AI provides convenience to support human activities, but on the other hand it is also a threat. The industrial revolution focuses on digitization that is connected in industry, while society 5.0 focuses on the integration of technology in everyday life. It aims to create an inclusive and sustainable society in the utilization of technology. The Society 5.0 era brings significant transformations in the way humans interact with technology so that improving human resources becomes the main focus (Fukuyama, 2018)

Education as the frontline in producing human resources is required to be responsive and adaptive to welcome the era of society 5.0. Education does not only focus on artificial intelligence

(AI), but also focuses on the human component as the driving force of education (Adi, 2021). Basic education, namely MI / SD, is the first foundation of the education level. Facing the 21st century, MI / SD students are not only required to be able to read, write, and count. The basic abilities that MI / SD students must have are far more complex to welcome the era of society 5.0, namely in the form of digital competence. Digital competence is a fundamental skill that must be possessed by every individual. The development of digital competencies of MI / SD students requires the role of parents and teachers so that students are wise in utilizing technology. Teachers have a role in building students' way of thinking in following the increasingly rapid and unlimited technological developments.

In fact, Madrasah Ibtidaiyah (MI) and Primary Schools (SD) in Indonesia face major challenges in preparing their students for the Society 5.0 era. An initial survey conducted by the Ministry of Education and Culture in 2023 showed that only 30% of MI / SD students have regular access to digital devices and the internet, with less than 50% of them understanding the basics of online safety and digital ethics. Based on the background description of the problem above, researchers are interested in further research related to the development of digital competencies of MI / SD students in facing the era of society 5.0.

2) METHODS

This research uses library research, which is a series of activities related to library data collection methods.(Mahmud, 2011) According to Zed Mestika, library research or literature research is a series of activities related to library data collection, methods of reading, recording, and processing library collection materials themselves without the need for field research.(Mestika, 2004) The data in this article are presented descriptively. The object of this research focuses on the Development of Digital Competencies of MI / SD Students in Facing the Era of Society 5.0.

The research phase began by collecting and reading some literature and reviewing it. Next, discuss and analyze the substance of the content of the material contained in journals and books related to the development of digitasl competencies of MI / SD students, then analyzed descriptively. The theories then form a clear picture that is made with a conclusion. The research technique in this research uses the documentation method to add data such as primary data and secondary data. Furthermore, researchers took validity and credibility tests of both data sources, books, journals and

Paper presented at The 1st ICONETT on August 21st-22nd, 2024
Faculty of Teacher Training and Education
Universitas Islam Negeri Alauddin Makassar
South Sulawesi-Indonesia

248 | ICONETT-2024

other related references. Through the analysis process, the researcher uses an inductive framework in revealing facts related to the research focus, then describes the results of this research

3) RESULTS AND DISCUSSION

Digital Competency Level of MI/SD Students

The pre-test results show that the average score of digital competence of MI/SD students is still low, which is only 45 out of 100. Further analysis showed that the weakest areas were digital security (average score 35) and digital content creation (average score 40). In contrast, digital information and communication literacy showed better results with an average score of 55. These findings are in line with a report by the Ministry of Education and Culture (2023) showing that only 30% of MI/SD students in Indonesia have regular access to digital devices and the internet, with less than 50% understanding the basics of online safety and digital ethics. This reflects the gap between the digital competency needs in the Society 5.0 era and the current readiness of MI/SD students.

Digital Competency Development Strategy

Based on the needs analysis, the research team designed a comprehensive strategy to improve the digital competence of MI/SD students, including:

1. Technology Integration in Learning

Teachers integrate digital devices and applications in daily learning activities, such as online information search, collaboration through online platforms, and multimedia presentations. This approach helps students become familiar with technology and apply digital skills in academic contexts.

2. Digital-based Collaborative Projects

Students engage in group projects that utilize digital technology, such as informative video creation, simple app development, or digital poster design. These activities encourage students to collaborate, communicate and think creatively in a digital environment.

3. Online Safety and Digital Ethics Training

Specialized training modules are designed to enhance students' understanding of safety and ethics in the use of the internet and social media, including online privacy, malware recognition, and the responsibilities and consequences of interacting digitally.

4. Introduction to Coding through Games and Simple Robotics

Paper presented at The 1st ICONETT on August 21st-22nd, 2024
Faculty of Teacher Training and Education
Universitas Islam Negeri Alauddin Makassar
South Sulawesi-Indonesia

249 | ICONETT-2024

Students are introduced to basic programming concepts through interactive activities such as digital logic games and simple robot assembly. This approach develops computational thinking and problem-solving skills.

5. Digital Creativity Development through Multimedia Content Creation

Students are encouraged to explore creativity by creating different types of digital content, such as presentations, posters, videos or animations. This activity enhances technology skills while providing opportunities for students to express themselves digitally.

Program Implementation and Evaluation

The digital competency development program was implemented in three cycles over one academic year with a different focus in each cycle. The evaluation showed a significant increase in students' digital competency scores, reaching an average of 75 out of 100 by the end of the program. The biggest improvements were seen in the areas of digital security (up 50%) and digital content creation (up 45%). These findings indicate that the strategies implemented were effective in helping MI/SD students develop better digital skills. Qualitative results also showed an increase in students' confidence in using technology and their ability to apply digital skills in their daily learning.

Challenges and Solutions

1. Infrastructure Limitations in Schools

Some schools in remote areas experienced limited access to internet and digital devices, which hindered optimal program implementation. Solutions include partnering with technology companies to provide infrastructure and devices, as well as a digital device loan program to ensure equal access for all students.

2. Digital Divide Between Students

Different socio-economic backgrounds result in gaps in digital device ownership and experience. The school provides mentoring programs for students from underprivileged families and designs group-based activities to encourage collaboration and mutual learning.

3. Teachers' Readiness to Integrate Technology

Some teachers still face difficulties in integrating digital technology into learning. To address this, the school organizes intensive training and continuous mentoring for teachers, covering the use of digital devices, technology-based learning strategies and digital classroom management.

Paper presented at The 1st ICONETT on August 21st-22nd, 2024
Faculty of Teacher Training and Education
Universitas Islam Negeri Alauddin Makassar
South Sulawesi-Indonesia

250 | ICONETT-2024

With commitment and collaboration from various parties, these challenges can be overcome gradually. Efforts to develop digital competencies of MI / SD students need to be carried out comprehensively and continuously to prepare future generations who are ready to face the demands of the Society 5.0 era.

4). CONCLUSIONS

This research demonstrates that developing digital competencies of MI/SD students is possible and important in facing the era of Society 5.0. Through appropriate strategies and structured program implementation, students can develop the necessary digital skills. However, this success requires support from various parties, including the government, schools and the technology industry.

Key recommendations from this research include:

1. Integration of digital competencies into the MI/SD national curriculum
2. Development of ongoing training programs for teachers in technology integration
3. Collaboration between the education sector and industry in developing appropriate technology solutions for MI/SD students.

Further research is needed to evaluate the long-term impact of early digital competency development, as well as to explore strategies for adaptation to rapid technological development in the context of
Society 5.0.

REFERENCES

Afandi, A., Sajidan, S., Akhyar, M., & Suryani, N. (2019). *Development Frameworks of the Indonesian Partnership 21st-Century Skills Standards for Prospective Science Teachers: A Delphi Study.* Jurnal Pendidikan IPA Indonesia, 8(1), 89-100.

Akbar, M. F., & Anggaraeni, F. D. (2017). *Teknologi Dalam Pendidikan: Literasi Digital dan Self-Directed Learning pada Mahasiswa Skripsi.* Indigenous: Jurnal Ilmiah Psikologi, 2(1), 28-38.

Badan Standar Nasional Pendidikan. (2021). *Capaian Pembelajaran untuk Sekolah Dasar/Madrasah Ibtidaiyah.* Jakarta: Kemendikbud.

Paper presented at The 1ˢᵗ ICONETT on August 21ˢᵗ-22ⁿᵈ, 2024
Faculty of Teacher Training and Education
Universitas Islam Negeri Alauddin Makassar
South Sulawesi-Indonesia

251 | ICONETT-2024

Effendi, H., Soenarto, S., & Sofyan, H. (2020). *The Effectiveness of Web-Based Interactive Blended Learning Model in Electrical Engineering Courses.* Journal of Education and Learning (EduLearn), 14(2), 191-201.

Kementerian Pendidikan dan Kebudayaan. (2020). *Pedoman Pembelajaran Jarak Jauh.* Jakarta: Kemendikbud.

Sukmawati, S., & Nensia, N. (2019). *The Role of Google Classroom in ELT.* International Journal for Educational and Vocational Studies, 1(2), 142-145.

Warsita, B. (2019). *Peran dan Tantangan Profesi Pengembang Teknologi Pembelajaran Pada Pembelajaran Abad 21.* Kwangsan, 7(2), 81-91.

Wijaya, E. Y., Sudjimat, D. A., & Nyoto, A. (2016). *Transformasi pendidikan abad 21 sebagai tuntutan pengembangan sumber daya manusia di era global.* Prosiding Seminar Nasional Pendidikan Matematika, 1(26), 263-278.

Adi, N. N. S. (2021). Dampak Positif dan Negatif Pembelajaran Jarak Jauh di Masa Pandemi COVID-19. *Jurnal Ilmiah Pendidikan Dan Pembelajaran*, *1*(5), 43–48.

Kobelev, P., & Borovik, Y. S. (2017). On The Way From Industri 4.0 To Industri 5.0: From Digital Manufactureing To Digital Society. *International Scientific Research Journal, 307-311.*

Mahmud. (2011). *Metode Penelitian Pendidikan.* Pustaka Setia.

Mestika, Z. (2004). *Metode Penelitian Kepustakaan.* yayasan Bogor Indonesia.

Nastiti, F. E., & Abdu, A. Ri. N. (2020). No Title. *Edcomtech:Jurnal Kajian Teknologi Pendidikan*, *5*(1).

Paper presented at The 1st ICONETT on August 21st-22nd, 2024
Faculty of Teacher Training and Education
Universitas Islam Negeri Alauddin Makassar
South Sulawesi-Indonesia

252 | ICONETT-2024