International Journal of Multidisciplinary Approach Research and Science
E-ISSN 2987-226X P-ISSN 2988-0076
Volume 3 Issue 01, January 2025, Pp. 71-81
DOI: https://doi.org/10.59653/ijmars.v3i01.1181

Literature Review: Use of Technology in the Learning Process at High School Level

Muhammad Safi'i[1]*, M. Joharis Lubis[2], Surya Masniari Hutagalung[3]
State University of Medan, Indonesia[1]
State University of Medan, Indonesia[2]
State University of Medan, Indonesia[3]
Corresponding Email: riziekapi@gmail.com*

Received: 09-11-2024 *Reviewed: 23-11-2024* *Accepted: 10-12-2024*

Abstract

In this era of digitalization, there have been major changes in education, especially with the integration of technology into the world of education. As an advanced stage of formal education, high school plays an important role in integrating technology into the teaching-learning process. Various studies show the great potential of technology to enrich student learning experiences, improve access to educational resources, and improve teaching efficiency. The study used the literature review method, combining the results of several related studies into a new topic. From the review, it was found that the use of technology in high schools involves a variety of digital infrastructures and programs, such as Zoom, Canva, digital education (E-Learnings), Google Classroom, Google Sites, Magic School, Kahoot, E-Ujian, video conference, electronic report (e-Rapot), and WhatsApp Application. The main advantage of technology is its ability to make teaching more exciting and interactive for learners. However, the challenge is the inequality of connectivity related to technology. Students who do not have electronic devices or internet connectivity risk being left behind, creating differences or imbalances in learning opportunities.

Keywords: Usage, Technology, High School Level

Introduction

The learning process continues to experience rapid development along with the advancement of digital technology (Joupy GZ Mambu et al., 2023). In today's digitalization era, there has been a significant transformation in the world of education that has changed the way of learning, driven by the presence of technology. This era influenced teaching-learning methods and brought new challenges for educators (Ritonga et al., 2024). The rapid development of technology and information in various sectors also affects formal education, especially in the use of technology in the teaching and learning process at the secondary school

level. Information and Communication Technology (ICT) provides comprehensive, fast, effective, and efficient access to information worldwide (Fahrozi, W. et al., 2003).

Teachers provide learning support to facilitate the stages of gaining knowledge, developing skills and character, and forming attitudes and beliefs in each student (Suardi M, 2018). Learning objectives are very important in this process, as they guide the teacher to achieve the desired results in teaching activities. In the age of digitalization, learning becomes an exciting experience for those who can use technology efficiently. Then, what should be the main focus of digital change in education? (Cem Dilmegani, 2022), Stated that the digital change in education should focus on three main areas. The first field is connectivity capabilities, where digital-based technology makes it easier for learners to get information or study materials. The second area, learning, involves interactions, which offer a variety of teaching methods that use media to improve the quality of learning. The *third* area, learning, is adapted to the needs of the individual, which allows the learning stages to adjust according to the student's situation, needs, and environment, thanks to the development of technology. (Husna et al., 2024)

Technological advances have indirectly changed the outlook on education today. Education today is not only limited to teaching methods but also involves a transformation of views on the concept of education itself (Surani, 2019). Various technological innovations have begun to be applied in education, allowing quick access to information from multiple parts of the world and facilitating communication (Yulianisa et al., 2018). Various studies and literature show that technology has great potential to improve students' learning experience at the upper secondary level, expand access to learning materials, and improve teacher teaching effectiveness.

The superior use of information technology is to acquire, transmit, process, interpret, store, organize, and use data meaningfully to produce high-quality information v. The quality of this information includes accuracy, relevance, and completeness. Information technology encompasses all related aspects, from its role as an auxiliary tool to managing and manipulating information. This technology aims to process data to produce information that meets high-quality standards (DS et al., 2022).

The utilization of more advanced information technology aims to obtain, transmit, process, interpret, store, organize, and utilize data effectively to produce high-quality information. The quality of this information includes accuracy, relevance, and completeness. Information technology covers all related aspects, ranging from its function as a tool to managing and manipulating information. Utilizing this technology aims to process data to produce information that meets high-quality standards (Nafizah et al., 2024).

Information and communication technologies (ICT) have revolutionized how materials are presented to students, presenting a more innovative approach (Riedmann et al., 2024). One application uses hardware such as personal computers, laptops, the internet, and devices as a learning medium. ICT also includes computer-assisted instruction (CAI) technology, which not only supports teachers in teaching akan but also functions individually to facilitate learning. CAI is designed to respond to each pre-programmed stage of learning. This technology can

potentially replace the role of teachers in the future. Various hardware and software, such as computers, laptops, Infocus, and interactive touch screens, are now increasingly used in schools to support digital learning and increase the interaction and flexibility of teaching methods as needed. (Larastuti et al., 2024)

In addition to application software and digital online learning, digital media such as Google Classrooms, Moodles, and Learning Management Systems (LMS) provide space for assignments, assessments, and other learning resources that can be digitally connected. Program Word processing (word), spreadsheet, and presentation programs such as Canva or Google Slides support collaboration between learners and teachers in creating engaging learning materials for Sound and image technology is also widely used, along with visual impressions, in the learning process, interesting animations and live audio programs can help convey information visually and audibly, increasing learners' understanding. In addition, adaptable learning technologies that can be customized and utilize artificial intelligence allow the customization of learning materials according to individual abilities and needs (Bumbungan et al., 2024). The use of Personalized Learning media in language, mathematics, and science is a clear example of technological adaptation. Virtual Reality (VR) and Augmented Reality (AR) are also starting to be applied in educational environments, providing a more detailed and impressive learning feel, where learners can connect with learning materials in a virtual environment or equipped perangkat with technological devices in the real world. (Gardas & Narwane, 2024)

Along with technological advances, learning methods that utilize artificial intelligence, data analytics, and interactive technology will continue to progress and have a major impact on students' methods of learning and teachers' approaches to teaching (Wisdayanti et al., 2023). In general, technological developments provide opportunities to produce more engaging, efficient, and accessible learning experiences for everyone at all levels of education. Regarding software utilization, online learning media such as Google Classrooms, Moodles, and other learning management systems (LMS) provide facilities for assignments, assessments, and learning centers that can be connected online. Program Word processing (word), number processing (spreadsheet), and presentation programs such as Canva or Google Slides allow collaboration between learners and teachers in compiling interesting learning materials. Audio-visual technology devices have also been used, such as visual impressions in the learning process, interesting animations, and live programs that help convey information through impressions and audio, improving student understanding.(Durall Gazulla et al., 2023)

Through the available written sources, various points of view have been discussed regarding the use of technology in education at the high school level, ranging from the use of multiple devices, such as personal computers and devices that support interactivity in the learning process, to online applications that meet the needs of students. These researches emphasize the positive possibilities of utilizing technology and discuss the difficulties faced by teachers, students, and schools when adopting technology into the traditional curriculum (Prasetyo, 2019).

Based on a comprehensive understanding of related research, further research in this area will explore in more detail the influence of technology on the learning process in schools

(Astini, Sari, 2020). The research will identify cara yang efficient ways to maximize the benefits of technology in the learning process, including how to integrate it into the curriculum that has been running (Darmawati, 2023). In addition, this research aims to formulate suggestions that can be applied to the school environment and educators to make maximum use of technology. Thus, this research aims to provide a learning experience that is changing, comprehensive, and innovative for upper secondary students so that students not only get a connection to technology but also learn what is relevant to today's needs.

Educators need to have sufficient ability to apply technology to the learning process. Teachers must be competent in various benchmarks of ability for using Information and communication technologies (ICT). These capabilities include operating personal computers and their supporting devices, installation, setting, maintenance, and troubleshooting on the device (Idir & Afni, 2023). Teachers are also expected to have programming skills using object-oriented programming languages to manage text-based documents, work slides, graphic design, and databases on personal computers and servers. In addition, educators are also expected to design interactive presentations by adhering to the principles of visual and social communication.

The digital age has made learners dependent on technology at an early age, including computers, tablets, and devices . The integration media of learning technology media in upper secondary schools can increase motivation and maximize learning stages. Advancements in technology offer connectivity to a wide range of interactive & varied learning resources, including E-learning, educational videos, and educational webs. In addition, technology favors online or distance learning, which is very appropriate for current needs (Utami et al., 2022). The use of technological tools, such as personal computers, InFocus, and interactive boards, is also a medium that can help educator's present lessons to their students in different ways, fostering the participation of students in the learning process. Therefore, it is important to understand the reasons for using technology in the learning process at the upper school level because this not only presents effective and efficient learning but also gives students the ability to use the technology needed in the future. Thus, this research aims to review the extent to which technology is beneficial in the learning process at the upper secondary level (Munawwarah, 2023). The unique thing about this research is that it's an innovative approach comprising several articles with identical themes. This makes it easier to combine information and allows the formation of new topics that can provide greater benefits. (Han & Geng, 2023)

Literature Review

Technology integration in the educational process has become a defining characteristic of modern learning environments. At the high school level, technological advancements have influenced how students interact with content, teachers, and peers, enhancing engagement and learning outcomes.

The use of technology in education is grounded in constructivist and socio-constructivist theories, which emphasize active learning and collaboration. According to Vygotsky's social constructivism, tools such as technology enable meaningful student

interaction, fostering deeper comprehension (Vygotsky, 1978). Similarly, Bloom's taxonomy highlights the role of technology in facilitating higher-order thinking, as digital tools often require students to analyze, evaluate, and create.

Technological tools adopted in high school classrooms can be categorized into hardware and software.

a) Hardware: Devices such as tablets, laptops, interactive whiteboards, and virtual reality headsets are increasingly prevalent. Studies highlight the portability and versatility of tablets, making them ideal for personalized learning (Kay et al., 2017).

b) Software: Learning management systems (LMS) such as Google Classroom and Microsoft Teams, educational apps, and game-based platforms like Kahoot! Provide interactive opportunities. Content-specific software, such as GeoGebra for mathematics or simulations for science subjects, has positively impacted subject comprehension (Clark et al., 2019).

Research Methods

The literature review study is an organized step where researchers identify, collect, evaluate, and combine various study sources following the main topic. The fundamental purpose of this research is to find out the current state of Science saat ini in the field, study the development of ideas, thoughts, approaches, and research findings that already exist, and seek to find parts that have not been explored for riset further research. The steps taken include discovering studies from other sources, such as scientific journals, books, articles, and theses related to the topic under study.

After collecting the study material, the researcher conducts an in-depth evaluation and compares the information found, identifying patterns, trends, and differences in research that has been done before. The researchers also assessed the quality of the methods applied in the relevant research to evaluate the relevance and validity of the findings. The stages of combining data and organizing information into a conceptual framework will later become the basis for further research. Greening the library is done through various structured steps. First, the researcher must have formulated the research topic clearly and in detail. The first attempt is to search the study through repository databases, digital libraries, and library catalogs to find suitable sources. In the second attempt, the sources found must be evaluated, considering the research methodology, the results, and the credibility of the authors. The third attempt after the literature selection process includes critically analyzing the sources reviewed. Researchers need to compare, contrast, and synthesize information from available studies while identifying patterns, differences, and knowledge gaps that have not been filled. Furthermore, the fourth attempt then involves the preparation of the results of the analysis into a conceptual framework that shows the interrelationships between ideas in the literature that has been reviewed.

The final step is to formulate a literature review in an orderly and rational manner in the format of a research report. This report should consist of a preliminary section, literature search methodology, literature analysis, and conclusions that outline the main findings and emphasize

the importance of the research to be carried out. Following each stage, the literature review can provide a solid foundation for further scientific research (Sugiyono, 2019).

Result and Discussion

The following ini is an analysis of the literature review of several studies that have similarities:

Technology Type: Google Site Learning App Application

Title: development of web-based learning media Google Sites on Ionic and covalent bonding materials for high school class X

Author, Years: (Deri Salsalina Br Sitepu, Herlinawati, 2023)

School: SMA Negeri 1 Bilah Hulu

Technology Type: Zoom App

Title: Zoom Meeting application as a learning medium in teaching economics at SMA Negeri 2 Klari

Author, Years: (Hani Nurhayanti et al., 2021)

School: SMA Negeri 2 Klari.

Type of Technology: personal computer and projector

Title: Analysis of Responses of Class Xii Mia Students Following Computer-Based Madrasah Assessment (Ambk) Through E-Ujian Browse Application On Physics Subjects

Author, Years: (Alpiana Hidayatulloh, 2024)

Type Of Technology: Google Classroom Learning Media

Title: Implementation of academic information system based on Google Classroom application in particular sports class at SMA Muhammadiyah 2 Boja Kendal

Author, Year: (Dian Rachmawati, Dian Hidayati, 20233)

School: SMA Muhammadiyah 2 Boja Kendal

Type of Technology: Personal Computer, Database, Computer Network

Title: innovation implementation of e-Report Card Information System in SMK Negeri 5 Padang

Author, Years: (Trys Supriadi, Waskito, 2024)

School: SMK Negeri 5 Padang

Type of technology: E-Learning web-based E-learning

Title: differentiated learning by utilizing Media Magic School Based on Artificial Intelligence (AI) in Indonesian language learning

Author, Years: (Regina Nandira Putri, et al., 2024)

Technology Type: E-report card

Title: utilization of Information and Communication Technology in learning in high school students

Author, Years: (Wirhan Fahrozi, Dedek Indra Gunawan, 2023)

School: SMA IT Unggul Al Munadi Medan

Technology Type: Design, Canva

Title: Utilization of Canva Applications in the Preparation Of Technology-Based Learning Media

Author, Years: (Lailia Rahmawati, et al., 2024)

Technology Type: Computer

Title: Utilization of Kahoot Application in Accounting Learning

Author, Years: (Nadia Maulida, et al., 2024)

High School: 1st grade

Technology Type: App, Smartphone

Title: the role of Whatsapp in learning PPKN during the Covid-19 pandemic at SMA Veteran 1 Sukoharjo

Author, Years: (Suyahman, et al., 2021)

School: SMA Veteran 1 Sukoharjo

Based on the literature review, various involvements have been made in using technology in teaching and learning activities in upper secondary schools. The technologies used include teleconference (Zoom), Canva, E-Learnings, ruang kelas, Google, Google Sites, Magic School, Kahoot, e-Rapot, WhatsApp, etc. The study covers the period from 2016 to 2022. This finding aligns with research conducted by Maskanah et al. (2021), which shows that the development of information technology is currently at a high level, allowing interaction between learners and educators through various media learning application media. An internet connection can facilitate interaction between educators and learners through E-learning sites,

WA groups, Google Classrooms, Google Documents, Google Forms, and video conference media such as Zoom.

The use of audio/visual-based learning media has a positive impact on increasing student learning achievement (Gabriela, 2021). Learning by utilizing video is a type of media that combines elements of audio (sound) and visual (moving images) as auxiliary media in the learning process. The advantages of video are seen in its ability to be played back and exposure to structured information. Therefore, videos are considered one of the best ways to help students understand concepts (Hadi, 2017). Implementing this technology also requires support from educators and students' parents. According to Hanifah Salsabila et al. (2020), educators' open attitude toward parents' feedback positively impacts learners' learning motivation. On the contrary, the passive attitude of educators in teaching and learning activities can negatively affect the mental state of students during the learning process.

The opportunity for educators to apply information and Communication Technology (ICT) in the learning process is increasing ("Augmented Educational Reality: Integrating AR Technologies into the Future Learning Process," 2024). This has to do with the availability of tools that can be used and the improvement of the ability of educators to take advantage of ICT when teaching. However, teachers face several challenges and obstacles in using ICT, both internal and external factors (Tamara et al., 2024). From the internal side, barriers may be caused by teachers' lack of competence and skills in utilizing technology. On the other hand, external problems can arise from points of view, such as the availability of technological infrastructure and ease of access to ICT devices. In the end, teachers' wishes related to the use of ICT in learning include collaboration between institutions in the telecommunications sector, the development of learning content and improving the quality of human resources in technology. With the synergy, teachers are expected to use ICT in a planned, integrated, and systematic learning process (Siahaan, 2015).

The use of technology in education has various positive and negative aspects that need to be carefully considered. One of the main advantages is the ability of technology to make the learning process more dynamic and interesting for students. By utilizing educational software and learning apps, students can adopt a more visual and audio-visual approach, improving their memory and comprehension. In addition, technology also allows access to a variety of online learning resources, expanding the range of subject matter and providing opportunities for students to learn independently (Suputra et al., 2023). However, there are shortcomings in applying technology in basic education that must be considered. One of the main problems is the unevenness of access to technology. Students who do not have electronic devices or internet connections may be left behind in the online learning process, which can create gaps in learning opportunities. In addition, excessive exposure to technology can impair concentration, dependence, and social isolation among students.

In this regard, careful planning, adequate training for teachers, and policies that support inclusiveness and equality of access are needed to maximize technology's benefits in education while addressing risks and challenges that may arise.

Conclusion

Referring to the existing literature review, the use of technology in the learning process at the elementary school level has involved various platforms and applications such as Zoom, Canva, E-learning, Google Classroom, Magic School, Kahoot, video conferencing, E-Rapot, and W A. One of the main advantages of technology is its ability to make learning more memorable for students. Thanks to the use of learning tools and application components, learners get a learning experience by utilizing reasoning through visualization followed by sound effects that can be clearly understood to improve their memory and understanding. In addition, technology allows access to various online learning resources, expands the scope of subject matter, and allows students to study independently. However, some challenges must be faced when applying technology in basic education. Limitations that must be overcome include variations in technology access, limited knowledge and skills of teachers in the use of technology, and the possibility of impaired concentration and social isolation in students. Therefore, to ensure that technology in high schools maximizes its benefits while reducing risks and challenges, careful preparation, adequate teacher training, and policies supporting equal access are necessary.

References

Astini, Sari, N. K. (2020).Utilization Teknologiof Information Technology in Pembelajaran elementary school learning Dasar during the Covid-19 pandemic. *Journal Lembaga Penjaminan of Quality Assurance institution Stkip Hindu Amlapura*, *11*(2), 13-25.

Augmented Educational Reality: Integrating AR Technologies into the Future Learning Process. (2024). *Futurity Education*. https://doi.org/10.57125/fed.2024.03.25.04

Bumbungan, F., Juraid, J., & Misnah, M. (2024). Development of Audio Visual Learning Media Based on Canva Application for Class VII Subject of Society at SMP Negeri 6 Sigi. *Journal of Education Method and Learning Strategy*, *2*(02). https://doi.org/10.59653/jemls.v2i02.721

Darmawati, D. (2023). Effectiveness of Powtoon Learning Media in Increasing Students' English Grammar Knowledge. *Journal of Education Method and Learning Strategy*, *1*(03), 136–143. https://doi.org/10.59653/jemls.v1i03.191

Dilmegani, C. (2022). 85+ Digital Transformation Stats from reputable sources. *AI Multiple*.

DS, Y. N., Harmawati, H., & Maulana, R. (2022). Analysis of the use Teknologi ofinformation Technology in Pembelajaran online learning during thePandemi Covid-19 pandemic in Sekolah elementary schools. *Basicedu Journal Basicedu*,*6*(1),869-876. https://doi.org/10.31004/basicedu.v6i1.2022

Durall Gazulla, E., Martins, L., & Fernández-Ferrer, M. (2023). Designing learning technology collaboratively: Analysis of a chatbot co-design. *Education and Information Technologies*, *28*(1). https://doi.org/10.1007/s10639-022-11162-w

Fahrozi, W., & Hts, D. I. G. (2023). Utilization of Information and Communication Technology in learning in high school students. *JICS: Journal Of International Community Service*, *2*(01), 59-68.

Gabriela, N. D. P. (2021). The Effect Pembelajaran Berbasi Of Audio-Visual Based Learning Media Visual OnImproving Hasil Belajar Elementary School Learning Outcomes. *Mahaguru:Journal Of Elementary School Teacher Education Dasar, 2*(1), 104-113. https://doi.org/10.33487/mgr.v2i1.1750

Gardas, R., & Narwane, S. (2024). An analysis of critical factors for adopting machine learning in manufacturing supply chains. *Decision Analytics Journal*, *10*. https://doi.org/10.1016/j.dajour.2023.100377

Hadi, S. (2017). Effective Use Of Video AsA Medium. *Prosiding TEP & PDs*, *Tema: 1 No*, 96–102.

Han, J., & Geng, X. (2023). University students' approaches to online learning technologies: The roles of perceived support, affect/emotion and self-efficacy in technology-enhanced learning. *Computers and Education*, *194*. https://doi.org/10.1016/j.compedu.2022.104695

Hanifah Salsabila, U., Irna Sari, L.,Haibati Lathif, K., Puji Lestari, A.,& Ayuning, A. (2020). The RoleOf Technology In Learning During The Covid-19 Pandemic. *Al- Mutharahah: Journal Penelitian Dan Kajian Of Religious Social Research And Studies Keagamaan*, *17*(2), 188-198. https://doi.org/10.46781/al-mutharahah.v17i2. 138

Husna, H., Iskandar, I., & Herlina, H. (2024). Design of Group Investigation (GI) Learning Model assisted by animation media to social skills in social studies learning. *Journal of Education Method and Learning Strategy*, *2*(02 SE-Articles), 839–845. https://doi.org/10.59653/jemls.v2i02.816

Idir, S. A. D., & Afni, N. (2023). Increasing Mutual Cooperation Values Using the Scramble Method in Class X Students of SMA Negeri 1 Palu. *Journal of Education Method and Learning Strategy*, *1*(03), 207–216. https://doi.org/10.59653/jemls.v1i03.292

Jennings, J., Harefa, A. T., Pebriani, E., Hanafiah, H., Rukiyanto, B. A., & Sabur, F. (2023). Utilization Of Technology In Supporting Learning: Interactive Training In Improving The Quality Of Education. *Community Development Journal: Journal Of Community*Service,*4*(6), 13121-13129.

Larastuti, L., Reviyanti, L., Gumilar, M. R., & Rahayu, A. S. (2024). Implementation of Independent Curriculum Material for Phase B Class IV Bhinneka Tunggal Ika: Knowing Indonesian Nation toward Forming Global Diversity Character Students of SDN 210 Babakan Sinyar. *Journal of Education Method and Learning Strategy*, *2*(03 SE-Articles), 966–981. https://doi.org/10.59653/jemls.v2i03.976

Mell, J. G., Pitra, D. H., Ilmi, A. R. M., Nugroho, W., Leuwol, N. V., & Saputra, A. M. A. (2023). The use of Artificial Intelligence (AI) technology in facing the challenges of teaching teachers in the digital era. *Journal on Education*, *6*(1), 2689-2698.

Munawwarah, M. (2023). The Efforts of School Principals in Improving the Pedagogical Competence of English Teachers in SMPN 1 Jeumpa. *Journal of Education Method and Learning Strategy*, *1*(02), 83–93. https://doi.org/10.59653/jemls.v1i02.89

Nafizah, U. Y., Roper, S., & Mole, K. (2024). Estimating the innovation benefits of first-mover and second-mover strategies when micro-businesses adopt artificial intelligence and machine learning. *Small Business Economics*, *62*(1). https://doi.org/10.1007/s11187-023-00779-x

Riedmann, A., Schaper, P., & Lugrin, B. (2024). Integration of a social robot and gamification in adult learning and effects on motivation, engagement and performance. *AI and Society*, *39*(1). https://doi.org/10.1007/s00146-022-01514-y

Ritonga, M., Mudinillah, A., Wasehudin, W., Julhadi, J., Amrina, A., & Shidqi, M. H. (2024). The effect of technology on Arabic language learning in higher education. *Journal of Education and Learning*, *18*(1). https://doi.org/10.11591/edulearn.v18i1.20867

Siahaan, S. (2015). Utilization Teknologi Of Information AndCommunication Technology In Learning: Opportunities,Challenges, And Expectations. *Journal Of*Technodics, *3*(1), 321-332. https://doi.org/10.32550/teknodik.v19i3.173

Sugiyono. (2019). *Methodology Penelitian of quantitative and qualitative research and R & D.*. Alphabet.

Surani, D. (2019). Literature studies: the role of educational technologists in Education 4.0. Proceedings of the National Seminar on FKIP Education, 2 (1), 456-469.

Suputra, I. N., Basuki, A., Dharma, B. A., & Sakdiyyah, D. A. (2023). Implementation of Office Administration Practice Media to Welcome the Independent Curriculum. *Journal of Education Method and Learning Strategy*, *1*(03), 114–125. https://doi.org/10.59653/jemls.v1i03.166

Tamara, Y., Hermansyah, H., & Marleni, M. (2024). ANALYSIS OF TEACHER PROFESSIONAL COMPETENCE IN UTILIZING INFORMATION AND COMMUNICATION TECHNOLOGY. *Esteem Journal of English Education Study Programme*, *7*(1). https://doi.org/10.31851/esteem.v7i1.14095

The Mask, I., & Sae, H. L. (2021). The Effectiveness Of The Use Of Technology In Pembelajaran Online Learning Di During Pandemi The Covid - 19 Pandemic. *Journal Jendela Of Educational Windows*,*1*(04), 279285. https://doi.org/10.57008/jjp.v1i04.60

The Promise, E. B. (2019). The use Teknologi of Information Technology in Sekolah elementary school.*Jurnal Research of Educational Sciences*, *7*(2), 1-19.

Utami, I. Q., Fahmiyah, I., Ningrum, R. A., Fakhruzzaman, M. N., Pratama, A. I., & Triangga, Y. M. (2022). Teacher's acceptance toward cloud-based learning technology in Covid-19 pandemic era. *Journal of Computers in Education*, *9*(4). https://doi.org/10.1007/s40692-021-00214-8

Wisdayanti, W., Hasan, H., & Nadjamuddin, L. (2023). Impact of Multicultural Based Education Learning In the Process of Social Integration at SMA Al Azhar Mandiri Palu. *Journal of Education Method and Learning Strategy*, *2*(01), 44–53. https://doi.org/10.59653/jemls.v2i01.311

Yulianisa, Rizal, F., Oktaviani, & Abdullah, R. (2018). Overview of 21st Century Skills among vocational teachers (Case Study: SMK Negeri 2 Solok). Journal of Civil Engineering and Vocational Education, https://doi.org/https://doi.org/10.24036/cived.v5i3.102505