Study Of Learning Opportunities And Challenges Based On Digital Pandemic Era

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Abstract

This article will discuss digital-based learning across subjects at all levels of educational institutions as a learning media tool. The discussion of digital-based learning is a very fundamental part to be understood by all educators, both at the school level and at the university level. This article is a literature review with a qualitative analysis knife method that explores in depth related to digital-based learning across subjects at various levels of education. Furthermore, digital-based learning for educators holistically is an obligation in mastering digitalization in the learning process because all materials or subjects at all levels of education are very in tune with technology. Based on the findings from the literature review results in various subjects and levels of education, digitalization in learning has increased student learning achievement. On average, educators who use digital-based learning across subjects encourage student achievement. But on the other hand, a phenomenon was also found, including students experiencing digital addiction for those who use cellphones, some teachers still have difficulty in digital-based learning, facilities for digital learners have not become full attention, internet access is limited, digital media innovation has not been maximized. Therefore, through this article, it is hoped that all educators such as teachers and lecturers will be more creative and explore the use of digital-based learning media that are more sophisticated and attractive so that students are more motivated in the learning process, so that student achievement continues to increase.

Keywords : *Opportunities; Challenges; Learning; and Digitization*

Abstrak

Artikel ini akan membahas pembelajaran berbasis digital lintas mata pelajaran di semua jenjang lembaga pendidikan sebagai sarana media pembelajaran. Pembahasan pembelajaran berbasis digital merupakan bagian yang sangat mendasar untuk dipahami oleh semua pendidik, baik di tingkat sekolah maupun di tingkat universitas. Artikel ini merupakan tinjauan pustaka dengan metode pisau analisis kualitatif yang mengupas secara mendalam terkait pembelajaran berbasis digital lintas mata pelajaran di berbagai jenjang pendidikan. Selanjutnya pembelajaran berbasis digital bagi pendidik secara holistik merupakan kewajiban dalam menguasai digitalisasi dalam proses pembelajaran karena semua materi atau mata pelajaran di semua jenjang pendidikan sangat seirama dengan teknologi. Berdasarkan temuan dari hasil kajian pustaka di berbagai mata pelajaran dan jenjang pendidikan, digitalisasi dalam pembelajaran telah meningkatkan prestasi belajar siswa. Rata-rata, pendidik yang menggunakan pembelajaran berbasis digital lintas mata pelajaran mendorong prestasi siswa. Namun di sisi lain juga ditemukan fenomena antara lain siswa mengalami kecanduan digital bagi yang menggunakan handphone, sebagian guru masih kesulitan dalam pembelajaran berbasis digital, fasilitas untuk digital learner belum menjadi perhatian penuh, akses internet terbatas, digital inovasi media belum maksimal. Oleh karena itu, melalui artikel ini diharapkan seluruh pendidik seperti guru dan dosen lebih kreatif dan mendalami penggunaan media pembelajaran berbasis digital yang lebih canggih dan menarik sehingga siswa lebih termotivasi dalam proses pembelajaran, sehingga prestasi siswa terus meningkat.

Kata Kunci : *Peluang; Tantangan; Sedang belajar; dan Digitalisasi*

INTRODUCTION

The Long Journey of Education in Indonesia which continues to experience policy changes, both from the curriculum aspect to the education unit management system that remains consistent with the direction of global development and the needs of the labor market. Curriculum changes lead to changes in the concept of graduate achievement that are oriented towards the future of graduates. Expectations of graduate achievement are also designed with the principle of global development so that Indonesia in the world of education continues to improve itself to compete with developed countries. Viewed from the aspect of education ranking, according to Novia Aisyah, (2021) and Nur, (2021) Indonesia has progressed from the aspect of education ranking, namely reaching one rank higher than 2020. Indonesian education in 2021 is ranked 55 out of 73 countries. Meanwhile, of the four developing countries in Southeast Asia such as Singapore, Malaysia, Thailand, Indonesia and the Philippines, Indonesia is in fourth place.

The era of education which is in an era of fast-paced movement demands that all concepts and variations of learning must be taken off from all contemporary learning processes. Likewise, the realm of policy in the world of education, must take off by bringing up new concepts related to global developments so that Indonesian education does not take off cheaply. Education policies tend to run in place. As stated by Risdianto, E. (2019). that changes in an education system must be seen from the collective aspect which consists of changes in learning styles, teaching models, curriculum, student needs, learning methods, facilities and infrastructure and competencies as well as the direction of graduates from time to time. Educational reform in the policy perspective that tends to be neglected here is from the aspect of facilities and infrastructure as well as teacher competence, and the distribution of educators in various educational units in the region.

The development of education always follows global issues that cannot be separated from the development of the industrial revolution, because indirectly, changes in the socio-economic order will also affect the order of the education system in every developing country and other developed countries. Santoso, H. (2017). The evolution of 21st century civilization with the phenomenon of progress is always marked by the development of technology or digitalization in the education system. In addition, placing information, knowledge, creativity, innovation, and social networks as strategic resources for individuals, communities, and countries. Furthermore, changes in the pattern of life, civilization, culture, and education require all aspects of education to improve themselves, both from the learning aspect. In connection with the direction of changing the learning system from conventional to digital, education policies require education to prepare teacher competencies in the digital literacy aspect.

According to Efendi, N. M. (2018) digital-based education is a new direction in renewing the mindset of educators and education personnel who must be able to integrate cyber technology. The purpose of education 4.0 is to prepare HR (Human Resources) such as educators and students who are creative and in accordance with current demands where the world is facing a digital-based industrial revolution. So that digital-based learning that can be used for all subjects must pay attention to three current educational issues, namely character education, vocational education, and innovation. (Wibawa, 2018).

The fundamentals of digital-based learning are because it can trigger the enthusiasm of students to learn and really support all subjects. According to Kurniasih, E. (2019) the use of digital media in learning for all subjects can

provide new variations and innovations in the transfer of knowledge between teachers and students. Knowledge of educators related to digitalization of learning is very important to prepare because maximally the learning process can run smoothly and is more liked by students. The use of digital media in the teaching and learning process can encourage children to be more active and happy, so that the goals of fun learning can be realized.

Based on some research data, it shows that digital-based learning can improve student learning achievement in all subjects and levels of education. The data can be seen in the research results of Wijayati, N., Kusuma, E., & Sumarti, S. S. (2019). related to learning chemistry at the Department of Chemistry, Faculty of Mathematics and Natural Sciences Unnes, the results of his research showed that there was an influence of digital-based learning strategies on student learning outcomes with an increase of 52.8%. The results of research by Amarulloh, A., & Surahman, E. (2019) Digital-based learning in elementary schools is considered very effective because it can improve students' ability to understand concepts, increase student motivation and be able to improve student learning outcomes. While the results of Mira, F. S. (2017) research, the effectiveness of Digital Storytelling-based learning media in history subjects is considered very good, this can be seen from the implementation and also the learning interest of students has increased by an average of 82, 25%. The results of other studies also illustrate the usual challenges of digital learning that educators must pay attention to for their students. As in the digital learning process where students use cellphones, students usually experience addiction to using cellphones. Apart from that, it was also found that there was a lack of control by parents and teachers regarding the application features used by students.

Based on the results of this study, it provides an illustration that digital-based learning is very beneficial for increasing student learning achievement. The space for learning achievement is largely determined by educators for all levels of education. increasing teacher competence related to digital literacy is very dependent on individual educators and the contribution of policy makers at the school level, and district and central governments in instructing digital literacy in the education room, both through training and independent study and school groups.

RESEARCH METHODS

This study uses descriptive qualitative research methods that aim to discuss and describe the opportunities and challenges of digital-based learning at various levels of education. Qualitative research in this study uses a literature review approach paradigm, where in the process researchers try to examine various research results through journal publications. According to Creswell, J. W. (2010) in qualitative research, there are many approach paradigms that can be used, including the paradigm of the library study approach whose data material is sourced from various library materials such as journals, books, and the like. The data analysis process was carried out using Ian Day's analytical techniques, namely categorization to data reduction, Dey, I. (1993). The data analyzed in this study is in the form of secondary data which is data sourced from library materials in the form of journals. Secondary data Kaharuddin, K. (2021) is data sourced from document data sourced from books, journals, research reports, and others deemed relevant.

RESEARCH RESULTS AND DISCUSSION

a. Research result

1.1. Digital Based Learning Opportunities

Digital-based learning from the results of a review of 30 journals shows that new patterns in digital-based learning systems in addition to providing new vehicles for improving student achievement, students and students also have their own challenges. Digital-based learning in education at all levels of education from the aspect of opportunities/benefits from 30 journals on average increases student achievement at all levels of education and for all subjects. As the results of research by Andayani, S., & Widjaja, H. (2016). related to the benefits of digital learning for students, the significant use of E-learning has a significant effect on increasing student learning achievement. Another study was also conducted by Trisiana, A. (2020) related to civics learning with the use of digitalization media, which showed that it has implications for digital learning with learning achievement so that according to him, using digitalization in learning requires an innovation.

Digital-based learning as the results of the above research conducted at the university level whose benefits greatly affect the transfer of knowledge in improving student learning achievement, also occurs in the Education unit at the High School (SMA) level. Several journals that have been reviewed provide an illustration that various subjects using digital-based learning media have significantly improved learning outcomes. The increase in learning achievement can be seen from the research results of Shiva, S. N. (2021). who examined the effect of digital literacy on critical thinking in social studies classes at the high school level which stated that digital literacy had an influence on critical thinking skills. Furthermore, the results of research conducted by Ginting, Y., Mahadian, A., &

Esfandari, D. (2017). related to the digital ability of teachers and students at the high school level, the results of the study based on comparative statistical tests were found to be 0.325 which in conclusion stated that there was no significant difference between the digital abilities of teachers and students.

The results of other studies as a reference in terms of opportunities or benefits of using digital-based learning are also stated in the research results of Hidayat, A. N. (2021). Regarding the ability of Islamic religious education teachers in digital-based learning in high school, the results showed that the ability of teachers to use digital-based learning was in the range of 61-80 with a good category. The achievement of this in the research results is due to the support factor for teaching and learning facilities. Meanwhile, research on digital-based application trials was also carried out by Salsabila, U. H., Habiba, I. S., Amanah, I. L., Istiqomah, N. A., & Difany, S. (2020). with the theme of using the Quizi application as a learning media in the pandemic era, the results of the study stated that the use of the application was considered very effective in the learning process. The effect of digital learning on learning achievement is also found in the research results of Purwanti, P. (2018) and Faisal, M., Hotimah, H., Nurhaedah, N., Nurfaizah, AP, & Khaerunnisa, K. (2020) that the use of solving modules The problem with using digital-based learning has a significant effect on student achievement compared to those who do not use digital modules. The results of this study are in line with the results of research by Indaryani, E., & Suliworo, D. (2018) which states that digital-based learning in high school through the WhatsApp application on physics learning is significantly considered very influential with a presentation value of 80.31%, in the study found a high motivation to learn physics. Digital-based learning at the Elementary School (SD) level methodologically from several research

results is very beneficial. This is confirmed by the results of research by Hidayat, N., & Khotimah, H. (2019) and Muhasim, M. (2017). although they are in different research locations and the research was conducted at the elementary school level, the results of their research show the same results, that digital-based learning has a very positive effect because it can encourage motivation, interest in learning and transfer knowledge faster. Other research results that support digital learning are Priyani, N. E., & Nawawi, N. (2020), whose research examines the science process in science lessons in elementary school, which states that Ethno-STEM learning with digital microscopes provides an increase in science process learning skills.

The results of these studies instruct all educators to be more innovative and explore digital media more to be used in teaching and learning activities. The use of digitization in the learning space in all subjects from various research results through journal reviews provides scientific knowledge that digitization has opened a new paradigm to open up more knowledge to all education personnel to be more in-depth called digital. The transformation of learning from conventional to digital turns out to provide more opportunities for intelligence, motivation and increasing student learning achievement. This is evident from the results of various studies such as Andarini, F. A., & Salim, H. (2021) in their research on the implementation of digital literacy in elementary schools. They found that digital literacy in the teaching and learning process was considered very effective. Utilization of digitalization literacy based on research data by Wakas, J. E., Manullang, J., & Wuwung, O. (2020) which examines the communication skills of elementary school students through digital storytelling with findings that are very effective because students are more aggressive in expressing opinions, asking questions and arguing.

1.2. The Challenge of Digital-Based Learning

Digital-based learning at every level of education is not only meant to improve student learning achievement, but also still contains various challenges for teachers and students. From the aspect of digital-based learning as the data from journal reviews shows that there are phenomena contained in digital learning as the results of Sarbani, YA, & Subandoro, PS (2018) research related to digital research from the aspect of understanding motivation and the benefits of using gadgets as learning media, the results of this study illustrates that on average their respondents are not optimal in the use of digital technology in learning. So suggesting the need for educators to improve themselves in the use of digital technology in the learning process. While the results of research by Raimanu, G. (2020) with a study of student perceptions of online learning, the results of the research obtained show that there are weaknesses, namely that the average respondent is still in the process of adjusting to online learning in the pandemic era because the use of online learning is considered to have a higher level of obstacles than the benefits.

Constraints to digital-based learning in each subject are believed to have variations due to aspects of competence, regional position and innovation of educators as well as student readiness. As the results of research conducted by Indahsari, H., & Sari, YA (2020) with a study of the development of character education through digitalization of learning, the research results state that digital learning has not been carried out intensively so that the motivation for using innovative digital-based learning by education personnel is not visible. . It can be interpreted that the digital-based learning process that is carried out by educators in the teaching and learning process is carried out at a minimum. Meanwhile, the research results of

Hidayat, A. N. (2021) and Anggianita, S., Yusnira, Y., & Rizal, M. S. (2020) related to obstacles in digital-based learning by studying the ability of Islamic Religion teachers with a digital learning perspective. The findings show that the expertise and skills of teachers in using digitalization as a learning resource and learning process are still not optimal. This can be interpreted that the not optimal use of digital can be due to teacher motivation, facilities, and encouragement of competence through training that has never been carried out by policy makers.

Digital-based learning at various levels of education that cannot be separated from various obstacles is illustrated in several research results, such as the results of Harike, H. (2021) research with the object of online learning studies at SMAN 11 Luwu. The results of his research illustrate that digital learning via online triggers student learning boredom caused by not meeting their peers and teachers directly. The collapse of interest in learning can be interpreted because the psychological factor of learning together in the space of direct interaction between teachers and students and between students does not occur as before, there is a direct collective spirit that is lost so that the learning process feels empty. This research is in line with the research results of Nur, A. S. (2021) which examines the portrait of mathematics learning in the pandemic era. The results of his research illustrate that online digital learning in mathematics subjects in high school reaps many problems, including students experiencing difficulties in accessing mathematics learning, difficulties in special networks in rural areas and parents' opinions to meet learning needs facilities. Another dimension of the constraints of digital-based learning such as online using mobile devices for students is found by the research results of Muhasim, M. (2017) which is the object of study on the effect of digital learning on students' learning motivation. The results

of his research illustrate that there is a tendency for students to be devoted to negative things, such as moral and behavioral disorders so that they need to strengthen faith and discipline on an ongoing basis. So from the results of the study, it can be interpreted that in principle students are prohibited from bringing cellphones to school because of the concern that many students are influenced by unfit songs to watch, it becomes their consumption so that the prohibition of using cellphones is prohibited in schools. Meanwhile, in the era of the pandemic, online learning facilities in total of students use cellphones, so that the energy of faith is needed to be strengthened. The results of this study are in line with the results of research by Ahsani, ELF, Romadhoni, NW, Layyiatussyifa, EL, Ningsih, WNA, Lusiana, P., & Roichanah, NN (2021) and Anugrahana, A. (2020) who studied Strengthening Digital Literacy in Learning, and expectations and obstacles. The results of the study illustrate that understanding online learning tools is recommended not only for students, but parents of students also understand digital-based learning on the grounds that parents have no difficulty in helping their children in the online learning process. The results of the research can be given approval, but on the other hand it is parents who have the obligation to make a living for the family so that online learning can be more widespread.

b. Discussion

The implementation of online-based digital learning at all levels of education is like two sides of a coin, where on the other hand there are benefits to the learning process because it can improve student learning achievement. On the other hand, the use of learning also found various challenges or obstacles in the implementation process at the education level unit. This will be discussed in this section theoretically by referring to the

findings from several reviewed journals. Digital learning at various levels of education based on journal review data was found to have a variety of useful values in the implementation process. This happens because of the process of acquiring knowledge through a creative open space in which policy makers are present.

Education such as the head of the education office, principals, teachers and students. The achievement of digital-based learning must be supported by a leadership that focuses on the concept of development. Through the actual development concept designed by the policy, the role of educators as a structure is obliged to implement it. The implementation process must be supported by an innovation that is continuously updated. Through this process, it will give birth to an increase in student learning achievement. In this process, a knowledge-based collective work policy is needed to achieve the development of student learning achievement.

The statement above is in line with the meaning of Glsasersfeld's opinion on constructivism learning theory in Fathurrohman, M. (2017) which states that knowledge and reality tend to have no absolute value but knowledge can be obtained actively which can be constructed through the senses or communicative space. So that the achievement of digital learning requires a communicative space between leadership policies and educators to achieve a digital learning process that can improve student learning achievement and is closely related to innovation. This explanation can be seen in the following image flow along with the explanation.
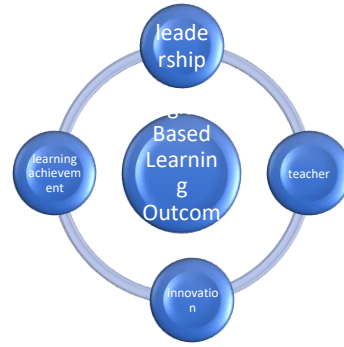
Picture 1. The Process of Achieving Digital-Based Learning

2.1. Digital Learning in the Leadership Space

Knowledge of digital-based learning in principle must start from leadership in educational units such as heads of offices, school principals and other devices engaged in the field of education. The leadership that plays the most role here is the leadership of the principal because the data shows the need for policy involvement to facilitate learning needs. The fulfillment of learning facilities in schools will have a positive impact on learning. Education policy in the education level space requires a separate approach, in the form of a learning needs approach. Learning needs policies such as digital-based learning require a study of the device approach to the implementation of learning needs by referring to indicators of special needs and general needs. The special needs referred to here are the needs related to tools or media that support the process of implementing digital-based learning such as; LCD, laptop, application, internet network and digital module. While the general tools referred to here are training, digital skills, and the mindset of educators. This is in line with the education policy theory according to Dolong, J. (2016). which must be a concern in education policy in the form of content of policy and context of implementation.

The learning needs policy must lead to the content of policy and context of implementation, which means that the preparation of digital-based learning facilities requires scientific inductive thinking, where policy making is based on the aspect of linking general needs based on specific events. So that the needs of digital-based learning in improving student learning achievement can be met. In the dimension of leadership policy, it is the main factor in the implementation of digital-based learning processes in the education unit environment. The set of learning facilities needs is located from the policy-making factors so that all learning processes can run optimally because the achievement of the learning system cannot be separated from facilities and facilities cannot be separated from policy factors. The policy chain of digital-based learning achievement factors must be a reflection of awareness that they are the main domain for the availability of learning needs facilities.

2.2. Educators in a Digital-Based Learning Room

Digital-based learning is strongly influenced by educators, the availability of learning facilities is not the only way to succeed in digitizing learning, but it is seen from the aspect of the teacher's ability to utilize existing facilities correctly and according to the needs of the learning process and the needs of students. As the theory of radical constructivism Glsasersfeld and Piagetian in Fathurrohman, M. (2017), the direction of the learning process is no longer on the conventional dimension, but the learning process must lead to an active student approach process, so students' knowledge can be constructed based on their own experience. This is what education personnel must pay attention to in digital-based learning. Educators must have very deep knowledge in understanding the conditions of each student they face so that the construction space of students'

thinking can occur based on their own knowledge.

Based on research data from Shiva, S. N. (2021) who examines the effect of digital literacy on critical thinking in social studies class at the high school level, which states that digital literacy has an influence on critical thinking skills. This ability is expected by digital-based online learning where students can construct their minds based on their knowledge. This process is in line with Woolfolk's opinion, in Supardan, H. D. (2016) regarding the theory of student information processing, where the captured information can be converted sensoryly into a symbol structure that can be constructed based on knowledge so that knowledge can be stored in memory.

Educators are the main actors as learning media so that all learning processes can be achieved. The achievement of digital-based learning objectives is closely related to learning strategies. Meanwhile, learning strategies can be generated by understanding the individual conditions of students in the classroom where digital-based learning models will be carried out. The key point for education staff towards digital learning lies in the aspect of mastering digitalization, understanding individual social conditions both in terms of competence, character and relevant learning models.

2.3. Innovation as Digital-Based Learning Achievement

Innovation is an absolute obligation to be carried out in all learning processes because in today's digital era it is a must for everyone educational institutions. Learning design methods are no longer in conventional learning concepts. Educators in realizing learner innovation must understand more and explore various features that can be used as learning tools. Like designing learning media, an education staff must master digital including: power point, animation, video

conferencing, google classroom, zoom, google meet and others. In connection with the above, education personnel are also more innovative in understanding digital media as a reference source in digital-based learning. Digital innovation competence is a fundamental part for educators, because the ignorance of educators regarding digital will confront students with conventional learning models. The main direction of achieving digital-based learning innovation for education personnel requires training and assistance because based on the data generated, it is still found that education personnel are not optimal in the digital learning process. The key point of achieving digital-based learning innovation for education personnel lies in the principles of digital readiness, tendencies, and mastery.

2.4 Learning Achievement The Success of Digital-Based Learning

The achievement of student learning achievements as a form of successful digital-based learning is part of the availability of learning equipment facilities needed in the Education room. Facilities are part of the main key to the running of the digital learning process. Apart from that, the availability of knowledge of educators related to digitalization provides a new space in the learning process. Teacher awareness regarding the learning process based on students provides new air for students whose learning motivation space continues to increase because they have the freedom to construct their thoughts based on their knowledge and experience. Furthermore, the creation of renewable learning innovations carried out by educators encourages students' learning motivation. If this continues to be the domain of education personnel, learning achievement will increase and the digital-based learning process can be claimed to be effective.

2.5. The Challenge of Digital-Based Learning

Digital learning has various levels of education based on journal review data found to have various challenges in the implementation process. Digital-based learning in the perspective of challenges in education units lies in aspects: weak digital competence, digital arena that is not touched by networks, low digital motivation, weak digital innovation and loss of digital supervision. This can be seen in the following chain of images and their explanations:
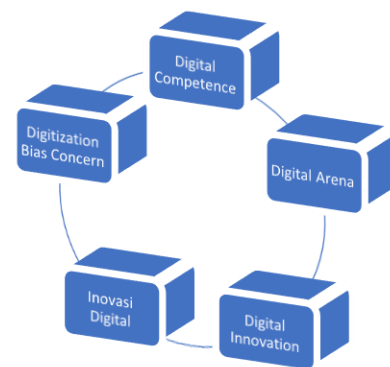
Picture 2. Digital Based Learning Challenge

3.1. Weak Digital Competence

Learning that is not able to improve student learning achievement with digital-based learning media indicates that the competence of educators is still weak. These weaknesses can be interpreted from the aspect of not understanding digitization. designing learning media, learning management and students' understanding ability. This is in line with the results of research by Sarbani, Y. A., & Subandoro, P. S. (2018) related to digital research as part of learning media. The results of this study indicate that on average half of education is still not optimal in the use of digital technology in learning. So suggesting the need for educators to improve themselves in the use of digital technology in the learning process. Given the development of the

digital era, it requires educators in all educational units to always improve their competencies so they don't take off.

The problem of the weak digital competence of educators which biases the learning achievement of students as in the statement above is in line with the opinion of Sanjaya, Wina (2005), from the aspect of the function of educators which in principle is very closely related to the tasks of planning, managing learning and assessing student learning outcomes. educate. Educators as planners for digital-based learning processes, educators must be able and more creative in designing digital learning that is in accordance with the conditions of the majority of students' competencies. Meanwhile, educators as managers must be able to produce an interesting learning climate so that students in the learning process can learn peacefully.

3.2 Digital Learning Arena Facilities

The learning arena referred to here is the location of the Education unit or the location of students, the problem of online-based digital learning lies in the internet network and the social conditions of the learning process so that the learning process is not effective which has an impact on student learning achievement. This is in line with the results of the research by Harike, H. (2021) with the object of the study of online learning at SMAN 11 Luwu. The results of his research conclude that digital learning via online triggers student learning boredom caused by not meeting their peers and the collapse of interest in learning because learning psychology factors and interaction connections tend to be a problem in every lesson. The problem of online-based digital learning arenas was also found in the research results of Nur, A. S. (2021) which stated that learning mathematics in the pandemic era found problems in the learning process including students having difficulty accessing internet networks specifically in rural areas. In addition, the

difficulty in learning for students lies in the learning facilities of students. The key point of this problem related to the online-based digital learning arena that needs to be a concern for policy makers and educators is the demand for the provision of internet networks, not just sharing learning quotas. Furthermore, understanding the psychology of the learning needs of students, with the concept of finalizing the strategy and design of learning media so that the learning interest of students does not ebb and flow.

3.3. Low Digital Motivation

The challenge for educators in the digital-based learning process lies in motivation. Without a deep motivational drive to design digital-based learning, educators will be dissolved in conventional learning models. The results of research by Dopo, F. B., & Ismaniati, C. (2016) illustrate that motivation through the perception of educators regarding digital learning has a positive and significant influence on the use of digital as a learning resource. The problem of the low digital motivation of teachers is very fundamental in the success of learning, so that good competencies must be framed with motivation to always be creative in creating digital-based learning media. The success of digital-based learning such as online learning is specifically determined by many interrelated variables so that in total it must be seen the parts of these variables in creating a learning climate and encouraging student learning achievement. Among the variables that must be considered are motivation, competence, learning facilities, networks, and other devices. The achievement of these variables according to Slamet, E., Harapan, E., & Wardiah, D. (2021) the main factor lies in the principal as the captain or actor in carrying out various activities in each educational unit.

3.4 Weak Digital Innovation

The weakness of digital innovation in the teaching and learning process in the current digital era has become an item that will definitely have an impact on increasing student learning achievement. The weakness of the innovation of educators in education units such as in Indonesia, especially in suburban areas, lies in supporting facilities and infrastructure such as computers, laptops, and focus groups. Apart from that, it is caused by the internet network and signal factors as well as the availability of electricity. A factor that is more fatal than the weakness of learning innovation that almost occurs in various educational units is the technical knowledge of educators operating or utilizing information technology. The weakness of digital-based learning innovation as the results of Bastudin's study (2020) lies in the lack of time to design instructional media, lack of training, and limited opportunities for self-development.

The achievement of good digital-based learning media from some educators takes more time to design than to prepare traditional learning tools through textbooks and worksheets. The above is in line with the research results of Asbari, M., Wijayanti, LM, Hyun, CC, Imelda, D., & Purwanto, A. (2020) which states that achieving learning innovation requires maturity or proficiency from the hard skills aspect and digital-based learning soft skills. Substantially the research results state that hard skills and soft skills have a positive and significant impact on the innovation ability of educators, either directly or indirectly. The results of the study recommend to create a model of how to build the innovation ability of educators which leads to the improvement of hard skills and soft skills.

3.5 Concerns of Digitization Bias

The use of digitalization in learning has given rise to many concerns in the education unit because it will bias students. Concerns about the bias in the use of technology as the results of research by Muhasim, M. (2017) which examines the effect of digital learning on students' learning motivation, where the results of the study show that students' tendencies are reduced to negative things, such as moral and behavioral disorders, so it is necessary to strengthen faith. and discipline on an ongoing basis. Apart from that, strict supervision is needed in the education unit environment regarding the use of digitalization as a learning tool for students. The bias of digital learning has substantially many forms in students, as in the results of research by Wulandari, R., Santoso, S., & Ardianti, SD (2021) which states that in the process of digitizing online-based learning various students tend not to understand subject matter, the birth of an attitude and a sense of laziness in learning, abuse of the use of technology during online learning, as well as the emergence of a child's indifferent attitude or lack of attention to learning material. The occurrence of this phenomenon requires all educators and parents of students to be more active in monitoring each learning process. To avoid the occurrence of digitalization bias in the learning process, collective work is needed between teachers and parents, or teachers and stakeholders in the education unit, so that all student activities are monitored properly.

CONCLUSION

The opportunities and challenges of digital-based learning at various levels of education in Indonesia in the digital era have various variants. From the aspect of opportunities to achieve a digital-based learning process with an online learning model, it is largely determined by school and government leadership, the competence of digital-based educators, digital learning innovations for education staff, and digitalization that motivates learning achievement. In this study, there

are many findings that become phenomena in the digital-based teaching and learning process at various levels of education units. The challenges of digital-based learning found are in the weak digital competence of educators, the arena of digitalization user education units in learning that has not been touched by the internet network, limited facilities for digital-based learning needs, low digital motivation, weak innovation in the use of digital as a medium, and there are still many things happening. concerns about digitalization bias for educators and parents as well as public spaces.

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