DIGITAL DIVIDE FOR TEACHER DURING PANDEMIC COVID-19

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Abstract
The phenomenon of the emergence of corona viruses disease (covid19) in today’s world affects change in social life especially from face-to-face models to online learning models. This has led to the emergence of disparities in access to the ability for teachers e-learning Blitar district. The digital gap by Van Dijk suggested that access is high in the communication and information technology categories held by individual persons and a high position. Those with higher education more have access to the internet than those with low. The second is the adoption diffusion theory By Everret M. Rogers were explained the adoption process of technology, information, and communication and discuss how innovation is adopted by the community. This study adopted qualitative approaches through in-depth interviews with five teachers chosen by purposive sampling methods. The results are the differences in resources experienced by teachers have an impact on the duration of access (often using built-in applications but never used for learning), mental, and social (teachers become passive). The most dominant differences in access are differences in motivation (teachers do not have a strong motivation to access), materials (teachers do not have sufficient income to access digital technology every day), skills and usage (teachers are not intense in using digital technology, they do not use current learning applications).

Keywords: Online Learning Model, digital divide, teachers

Abstrak
Fenomena munculnya Corona Virus Deasease (covid19) di dunia saat ini mempengaruhi perubahan pola kehidupan sosial khususnya model pembelajaran dari tatap muka menuju online learning models. Hal ini menyebabkan munculnya ketimpangan kemampuan para guru dalam akses e-learning di Kabupaten Blitar. Teori yang digunakan adalah teori kesenjangan digital oleh Van Dijk mengemukakan bahwa akses yang tinggi ke teknologi komunikasi dan informasi dimiliki oleh individu dengan kategori personal dan posisi yang tinggi. Individu dengan pendidikan tinggi lebih memiliki akses ke internet dibandingkan dengan yang berpendidikan rendah. Teori kedua adalah Adoption Diffusion Theory (ADT) oleh Everret M. Rogers dimana menjelaskan proses adopsi teknologi, informasi dan komunikasi dan membahas bagaimana sebuah inovasi diadopsi oleh masyarakat. Penelitian ini menggunakan pendekatan kualitatif melalui wawancara mendalam kepada lima guru yang dipilih melalui metode purposive sampling. Hasil penelitian ini adalah Perbedaan resource yang dialami guru berdampak pada durasi akses (sering mengunakan aplikasi bawaan namun tidak pernah digunakan untuk pembelajaran), mental, dan sosial (guru menjadi pasif). Perbedaan akses paling dominan adalah perbedaan motivasi (guru tidak memiliki motivasi yang kuat untuk mengakses), material (guru tidak memiliki pendapatan yang cukup untuk mengakses teknologi digital)
setiap harinya), keterampilan dan penggunaan (guru tidak intens dalam menggunakan teknologi digital, tidak menggunakan aplikasi saat pembelajaran).

**Keywords**: Daring, Online Learning Model, kesejangan Digital, Guru

**INTRODUCTION**

This study explains how the digital divide of education personnel, especially teachers in Blitar Regency, in utilizing access to information and communication technology during the current Corona virus pandemic. The importance of looking at the form of the digital divide in teachers in Blitar Regency, especially the ability and type of use in e-learning in schools because information and communication technology along with the internet in the current era of massive digital society have brought significant changes in various economic and social fields and of course in the sector. education. The development of information and communication technology in the digital era has a significant effect on the learning system when a pandemic occurs.¹

The importance of studying the digital divide among teachers in terms of their abilities and types of use in the learning process is a significant problem because of the increase in student human resources, self-potential development, and new knowledge information obtained from educators. Since the WHO (World Health Organization) established in March regarding Corona Virus Disease (Covid19), the Indonesian government has taken several actions, including the Physical Distancing campaign, shifting holidays,² PSBB (large-scale social restrictions) to the ban on going home. This condition directly causes the world of formal and informal education to close the existing learning in schools, as well as replace it with online learning (online)³. This transition raises obstacles for teachers considering this happened suddenly without proper and clear preparation. The Indonesian government in this regard also contributed by providing circular letter no. 04 of 2020 concerning the implementation of education policies in the emergency period of the spread of the Corona virus (Covid 19)⁴ and the Circular Letter of the Governor of East Java No. 420/1780 / 101.1 / 2020 about the increased vigilance against the virus Covid 19 participating inhibit direct knowledge of information from teacher to student and campudian urge to perform an online learning activity called the Online Learning Models.

Online Learning Models abbreviated as OLM is a form of learning model using technology, information and communication to facilitate educators during online learning in educational institutions in the process of changing from a teaching community to a learning community⁵. The use of various media, computers, and information technology has become a consideration for teachers to build classroom learning implementation. The content includes presenting

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examples and exercises to increase student interest in learning, providing supporting tools (images, mottos, icons) in order to facilitate the delivery of learning materials, as well as building communication between students and educators in an easier and more flexible group frame. without being limited by space and time. One of the breakthroughs is the face to face driver, synchronous, self direct, asynchronous Utilization of these breakthroughs is needed not only as a learning design so that it has an impact on effective learning but makes educators more skilled at using blended internet technology to create attractive online learning designs, especially in the secondary education environment. According to Imania, online learning is one method of delivering conventional learning which is poured in digital format via the internet. According to him, online learning is considered as the only medium for delivering material between teachers and students during a pandemic emergency.

Then teachers are further expected to be able to master all learning needs during a pandemic. In the Government of Indonesia regulation number 74 of 2008 concerning teachers, article 3 explains that there are four learning competencies that must be possessed by educators, both teachers and lecturers, including pedagogic competence, professional competence, personality competence, and social competence. Each competence influences the achievement of the learning process to students, for example professional competence regarding the ability of educators to plan, implement, and ultimately evaluate learning. In particular, the professionalism of educators in producing innovations needed by students by adjusting to the high use of technology, information and online-based communication when learning in class. Subsequent changes occurred during the pandemic where the Indonesian government through circular letter Number 3 of 2020 on education units and Number 36962/MPK.A/HK/2020 concerning the implementation of education in the Covid-19 emergency period. Therefore, these innovations must be implemented online to prevent the spread of COVID-19. Several applications and types of programs that can help make educational insights and information easier and more flexible and support classroom teaching during a pandemic, including e-books, e-libraries, youtube, Ruang Guru, Belajar.Id, and many other applications. For educators who are accustomed to conduct face-to-face learning, the pandemic condition creates unpreparedness and even tends to be imbalanced in learning preparation. According to Henry (2020) that the changes that occur quickly and suddenly due to Covid-19 have made all people technologically literate. Through technology, this is the only step that can connect teachers with students in online learning.

In the study, it was stated that the ability of educators tends not to follow the development of information and use of technology compared to millennial teenagers, information and communication are currently trending. Particularly in Blitar until this year has facilities that have not been supporting the internet media, communicate online and have not

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been able to access and operate social media technologies are fulfilled in their daily lives. Socio-demographic factors of Blitar Regency from educational background, age, even experience in media convergence also tend to be uneven so that it can then impact on the abilities (skills) of each educator or teacher. The existence of technology, information and communication ultimately not only has a positive impact on individuals, it also has a negative impact on other individuals, especially educators. This behavior is known as the Anomaly State of Knowledge, which is someone who feels that his level of information knowledge has not been able to deal with the effects of digitalization that occur in society and is eager to find a solution.

Educators and teachers in Blitar district who do not have the ability to access and operate the internet need information on how to access online learning, designing some scripts and creativity in online learning and the like. Various trainings have been held by the East Java government in order to increase technology and internet literacy. However, there are still some aspects of inequality that discriminate against educational staff when integrating learning with the internet.

Socio-economic status is one aspect of inequality inherent in educators. Socio-economic status is an individual's position in the community group environment based on social recognition and the ability to meet their needs. Schiffman (2008) suggests that status is most often determined from the point of view of one demographic variable in society: family income, employment status, and educational attainment. So educational background is closely related to work status and contributes to the high or low income earned. In the study, it was found that the higher the educational background of the educators in the city of Surabaya, the higher the economic background. Data collected by the Regency BPS shows that 60% of the educators in the city of Surabaya have a bachelor graduate background and the rest are high school graduates. The types of salaries and allowances for educators also experienced a significant increase in accordance with the minimum wage for Blitar Regency, starting from 300,000 to 500,000. This reinforces that in addition to educational background and income, the factors of housing facilities and the social position of educators in their environment also contribute to measuring socio-economic status. The quality of the environment and the value of the residence, and the furniture items owned are other variables that can be a measure of the social status of educators. The impact is that some teachers are able to meet basic needs for their families and have learning facilities that support their work and some are unable to meet digital needs in learning. Research shows that digital literacy skills in junior and senior high schools in Blitar district are at a moderate level, marked by the unequal social system for teachers, students and school staff, as well as the unequal distribution of digital device support infrastructure.

This research uses Van Dijk's digital divide theory framework and the adoption diffusion theory proposed by Everret M. Rogers. In theory, the researcher wants to use the

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9 Kuntarto, “Keefektifan Model Pembelajaran Daring Dalam Perkuliahan Bahasa Indonesia Di Perguruan Tinggi.”
terms personal category and position category in mapping how the digital divide for teachers at SMP N 1 Srengat, Blitar Regency\textsuperscript{12}. The personal category consists of several indicators, namely age, gender, race, personality. Position categories consist of occupation, education, household, and nationality. Van Dijk argues that high access to communication and information technology is owned by individuals with high personal and position categories\textsuperscript{13}. For example, individuals with higher education have more access to the internet than those with less education. The explanation regarding the relationship between personal and position categories to the digital divide is summarized in a model as shown below.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure1.png}
\caption{Van Dijk's digital divide model.}
\end{figure}

Based on Figure 1, we can see that personal category and position do not directly affect access. However, this influence is mediated by sources which can be: 1) Time (\textit{temporal}): duration of digital media use, 1) Material (\textit{material}): assessed from income or employment, 3) Mental (\textit{mental}): possessed motivation or technical ability, 4) Social (\textit{social}): a social environment that can help use digital media, 5) Culture (\textit{culture}): status or how we define the world\textsuperscript{14}.

For example, a teacher with a good economic level may not necessarily be able to access it if the local culture prohibits local teachers from doing online activities. Van Dijk said that there are four stages of access, namely: 1) motivation; 2) materials; 3) skills; 4) usage\textsuperscript{15}. These stages are hierarchical. If the individual only reaches the first and second stages, then he


\textsuperscript{13} Ibid.

\textsuperscript{14} Ibid.

\textsuperscript{15} Ibid.
cannot be categorized as an expert. This study does not use all the variables contained in the Van Dijk model. The author only looks at how different personal categories play a role in determining access. Thus, the formulation of the problem from this research is how the most dominant form of digital divide is experienced by teachers. The next theory is the adoption diffusion theory (ADT) from Rogers. This theory is used to explain the process of adopting information and communication technology to research informants. Adoption Diffusion Theory (ADT) discusses how an innovation is adopted by society. Rogers does not limit innovation only to information and communication technology, but can also be in the form of health, management, and others. Pick and Sarkar mention that there are several characteristics of innovation that can affect the level of adoption, namely:

Relative advantage, the level of adoption is strongly influenced by the advantages possessed by the innovation compared to its predecessor. These advantages can be in the form of technical, economic, social or status advantages. Relative advantage is also affected by the profile of the adopter. For example, the Google search engine will be perceived as an innovation by individuals with lower levels of education than those with higher education. Compatibility, this characteristic sees that the adoption power is influenced by the level of compatibility of the innovation with existing values, past experiences, and the needs of the adopters. Compatibility may vary with changes in education level and employment level. Complexity, this character sees the level of complexity of an innovation as a consideration in adopting. Complexity will be a challenge in the early stages of adoption and becomes easier once you get used to it. For example, Facebook will look complex when it is early adopted. However, along with continuous use, individuals are getting used to it and Facebook no longer looks complex. Triability is an innovation opportunity that can be prototyped or duplicated. Triability is very important for early adopters as compared to late adopters. Observation is the extent to which the innovation is available for individuals to observe. For example, smartphones will be quickly adopted when individuals can directly observe the use of smartphones by their closest people.

METHOD /RESEARCH METHOD

The method used in this research is qualitative method. This method emphasizes the importance of finding out the meaning of the individual. Qualitative research is usually associated with meanings, concepts, characteristics, definitions, metaphors, descriptions, and explanations of things. The research design used is a case study. Lune defines a case study as follows:

“a method involving systematically gathering enough information about a particular person, social setting, event, or group to permit the researcher to effectively understand how the subject operates or functions.” (Lune & Berg, 2017)
Data collection techniques were carried out through in-depth interviews and observations. Samples of this research is the Master SMP N 1 Srengat K abupaten Blitar . The sample was selected using a purposive sampling technique. The number of samples interviewed was five people. Data collection techniques were carried out by interviewing and filling out online questionnaires. The interview technique carried out is included in the unstructured interview technique and only contains the core problems regarding the constraints of online learning. The data obtained from the interviews and questionnaires were then analyzed using the concept of miles and hubberman through reduction, display data and conclusion.19.

RESULTS AND DISCUSSION
Information and Communication Technology Ownership and Adoption Rate

Information and communication technology innovations have increased continuously and significantly, especially innovations in gadgets, smartphones and internet media. Every year, gadget companies, especially smart phones, continue to innovate in order to offer the latest features to customers. So, people often find various types of smartphones with very sophisticated features. The innovations made by the company are enthusiastically welcomed by consumers. This can be seen from the trend of frequently changing smartphones in society. Those who have the latest series of smartphones tend to be seen as 'modern' people. Not infrequently, this lifestyle is also a symbol of a person's standard of living.

Indonesian society can be said to be very adaptive to smartphones. They are never afraid to try the latest innovations from smartphones. Almost the majority of Indonesian people can be categorized as early adopters in adopting smartphones. However, different things were found in the informants of this study.

All informants have indeed adopted and used mobile phones. However, not all informants have smartphones and applications that can support productivity. For example, LMS (learning Management System) applications, Googlemeet, Google Classroom, Zoom, Render, Teacher's room. Most of the informants only use standard or built-in applications from smartphones. This is because the informant does not need more effort to install the application.

The theory of adoption diffusion states that there are several factors that influence the innovation adoption process, namely: 1) relative advantage; 2) compatibility; 3) complexity; 4) triability; 5) observation. These five factors affect the low adoption of informants towards smartphones and certain applications. The results of the study found that of the five informants, three of them did not adopt a smartphone. They prefer to use ordinary cell phones. Informants who do not adopt smartphones (phones connected to the internet) think that their adoption is not compatible with their needs. This is because they interpret mobile phones only as a medium to communicate, not to seek information or to help increase productivity.

Complexity is also a factor that influences informants not to adopt smartphones. As a result, they must learn first to be proficient in using smartphones. This is what makes them lazy to adopt because it takes more time and effort to be able to use it.

In the study, it was also found that informants bought smartphones because they had

past problems. The informant explained that he bought a smartphone to prepare for online activities at school. He stated that when the covid pandemic hit all over Indonesia, teachers had to prepare early to buy a new smartphone so that the same problem did not occur in the previous lesson, where the informant had to borrow a school laptop and even a friend's laptop to teach on the same day.

Meanwhile, the observation factor is not so important. Informants can observe the use of smartphones on other teacher colleagues. However, informants are still not motivated to adopt because for them a smartphone is not something that is really needed, but what is needed is training and assistance from the school IT team to solve digital media problems for teachers at school. Informants who did not adopt a smartphone also revealed that the factor of having to buy internet credit also made them lazy to adopt. In addition, the characteristics of smartphones that must always be connected to the internet are considered to be inconvenient and difficult.

An interesting finding from this research is that three informants who do not adopt smartphones think that the problem of smartphones and the internet should be the student's business. This is because the informant explained that students were more proficient in using it, and the teacher himself had no serious enough intention and motivation to find out all the content on the smartphone. This opinion is in line with previous research related to the digital and cultural gap which states that technology is the domain of men, as well as people who have a young age range. One of the reasons is that since birth they have had a significant environment and reality for increasing knowledge of smartphones, both content and applications in it. The informants also mentioned that they did not have much time to intensely use them because they had to take care of household chores. This answer further supports previous findings which state that motivation in terms of using internet access also affects the digital divide.

At the device adoption stage, we can see that there is a digital divide in the form of differences in technology. Although, the gap is not that big, students tend to have more sophisticated devices when compared to teachers

**Personal, Resources and Access Categories in the Digital Gap**

This study focuses on one indicator of the position category (Resource), namely education. The author uses teachers and students to see differences in access to digital media until it is finally referred to as a form of digital divide. Information related to the use of smartphones and the internet by teachers was obtained through interviews with informants who work as teachers at the junior high school level. This can provide added value because we can see how educators such as teachers assess themselves and how students judge teachers.

The results of interviews with five informants will explore the sources owned by each informant first. Each informant on average has a relatively different time or duration in accessing digital media. One informant who is not very active in using digital media explained that internet access is only done in his spare time and no more than two hours per day. The reason is that he prefers to focus on completing homework and does not have enough time to learn to use the application to increase his insight and experience. There are also informants who actively use digital media media
Meanwhile, there were also several informants who stated that they could access digital media more than five hours per day. With long access times tend to have better digital skills. An informant said that the purpose of accessing the application was to find information, *stalking the* timeline that appeared on twitter, instagram, *whatsapp*. Most of them not only access social media but also news websites and play games and are rarely used to open online learning training sites. This difference shows that there is a gap between teacher access motivations which in the end will affect the ability or skills of digital media.

Material factors in this study are defined as limited only to income. On average, among the informants have the income of the *prosperous* group. This can be seen from the testimony of the informant who explained about the quota and the need for digital devices that he could buy periodically, that the informant intensely bought quotas between once every 15-30 days. There are also informants who buy quota needs every 2 months. The reason is that the quota price is expensive and sometimes the quota signal is weak. Each informant has different motives in accessing the internet and digital media. As stated by Alfred Schutz, the motive is "in order" from an action and action orientation towards future events by relating the experience of the subject. In this study the motivation of teachers in accessing digital media can be in the form of seeking entertainment, information, communicating, and supporting work. Differences in motives between informants are influenced by employment status. Meanwhile, on average there is no difference in motives between teachers and students.

The social environment network plays a role in helping informants to access digital media. One of the informants knows the internet from a network of friends, there is also someone who knows about online buying and selling applications. The network also helps informants learn about the internet and digital media. It's just that students tend to learn digital media self-taught compared to learning from those closest to them and teachers don't only get *tutorials* from the experiences of people around them, such as being told by their children, husbands, or neighbors. This causes students to become more proficient in using digital media than teachers who have to wait for help first.

Culture in Indonesia that has entered the era of *digital informationalism*. This culture tends to alienate teachers. These cultural practices which greatly influence the current generation on access are a stereotype that must be accepted that technology and the internet are identical to millennial society (young generation) and identical teachers tend to be considered technological stutterers because their youth did not get knowledge and information about digital media. The results of this study reinforce previous research which states that culture still affects *internet* access to technology. This can be seen from the number of informants who access digital media less than students who all have access.

The digital divide can arise in various stages such as gaps in access, skills, use and motivation. In this study, the author only examines the digital divide in the form of access, especially by using Van Dijk's digital divide model. The access contained in this model consists of several stages, namely motivation, materials, skills, and use. According to van Dijk, motivation can move individuals to want to care and use digital technology. This study found that there are forms of teacher motivation in accessing digital technology. The results of the study show that informants tend not to have a strong motivation to access and assume that digital technology is not something important and difficult.
Material access is the access that individuals have in the form of education level, income, race, and others. The informants of this research have access to pretty good materials such as medium and high levels of education and income. This has an impact on the types of devices owned and access to digital media. Teachers tend to access digital media regularly because they have the capital to buy internet quota per month, following the informant’s narrative, "Um, bro, I can buy a quota at least once a month can reach 5GB, but yes, I use it for WA and for online (learning) it’s useless, bro, I don’t know how to do it (can’t access the internet)"

Some informants even complained about the weakness of the signal in the area, some even said that the signal here was almost non-existent. This happens because the signal tower that reaches the area in other districts. Another informant stated that Indosat’s provider signal was more stable than Telkomsel’s because the signal was strong enough, but he didn’t buy too much quota for fear of losing if he couldn’t use it after buying it due to weak signal, as stated below: "I use a lot of quota, it’s useless, bro, here the quota (provider signal) has dropped and I can’t access the internet, except for Indsat, sometimes the wind blows and it's loud"

Access to skills also plays a role in the stages of access to information and communication technology. The access is divided into several skills, namely operational, information, and strategic. Most of the informants have operational skills. It’s just that some informants have limited abilities in basic operations such as sending messages and opening built-in applications. "I can only use applications like WA (Whatsapp application), Facebook, bro, for an application to learn, my son is smart, I don’t even do it"

Meanwhile, only three informants have information skills (finding the required information). Informants who have information skills are those who have more experience in applying digital media for primary needs.

Regarding learning applications, according to informants when students and teachers have devices and laptops as well as internet networks, learning can be carried out. But the fact is that when learning is carried out, the obstacles that are obtained are very many, one of which is not being able to access the application.

"At first I thought that online learning was easy, bro, I have a laptop and the children are also very smart at playing cellphones, after 3 meetings with students online, I was confused, bro, I was the same as the laptop and the application, finally I told them to just to collect assignments by WA and collect them on the same day"

The last stage of the access process is access to use in everyday life. This can be measured from four indicators, namely duration of use, applications used, broadband or not, and active or passive users. The results showed that the informants experienced a tendency to lag behind in terms of the use of both the applications used. One of the informants only uses limited experience in applying digital media content on their devices. Another informant said that he chose to use the Whatsapp application as an online learning tool, the reason being that it was easy and that was all he could. Other informants said that in learning they also used applications on Ms. Word, Power Point, Video Links, to create lesson assignments and create assignments. One of the informants explained how to use digital media in learning by using video calls, because it was considered that video calls made students happy. In accordance with the assumption, Gough stated that students like and are comfortable using video calls because
it can increase student learning and motivation. However, it is better to collaborate on the contents of the video call, which is not only the teacher's sermon, but also discussions and questions and answers.

Based on the explanation above, we can see that the digital divide between teachers as informants really exists. This is very worrying because the role of teachers in education, especially online learning causes pedagogic competence, professional competence, personality competence, and social competence to decrease drastically. Likewise regarding the ability to organize material, namely choosing learning materials and compiling materials. When learning takes place face-to-face, teachers are used to organizing learning. According to the informant, this became an obstacle when learning took place online, he had to choose extra learning materials so that there were no misconceptions between him and students when explaining the material. In addition to having to choose the right material and be extra careful, the informant also saw the students' achievements in the lesson.

In the digital era, teachers must have qualified digital skills to help supervise and educate children in using digital media. There is a need for clear and planned training in order to improve the quality of digital informants so that learning carried out during the COVID-19 pandemic can run as it should.

CONCLUSION

The digital divide is a phenomenon that will always grow along with the development of digital technology. The gap is not only in the form of access to tools but also in the form of skills, behaviors, and content. Based on the formulation of the problem in this study about how the most dominant form of digital divide experienced by teachers and the process of adopting information and communication technology on research informants, the conclusions are as follows: 1) Differences in resources experienced by teachers have an impact on differences in resources such as duration of access (often using the default application but never using it as part of learning information), mental (teachers do not have a strong motivation to access), social (teachers become passive in utilizing digital tools for learning and often require the help of those closest to them to master digital technology). 2) The most dominant access differences are differences in motivation (teachers do not have strong motivation to access), material (teachers do not have sufficient income to access digital technology every day), skills (teachers mostly only master innate operational skills), and use of (teachers are not intense in using digital technology, do not use various applications when learning, and are passive users).

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