

The Readiness Analysis of Teaching and Learning to Encounter the society 5.0 Era

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ABSTRAK

Teknologi yang berkembang pesat telah mengubah semua sistem pendidikan berbasis teknologi. Ada yang sudah merasakan manfaat dari teknologi, meski harus diperkenalkan lebih jauh dalam pemanfaatannya. Di era Society 5.0, kesiapan pemanfaatan teknologi harus disiapkan. Jadi, mengintegrasikan teknologi dalam pengajaran dan pembelajaran adalah suatu keharusan. Penelitian ini bertujuan untuk mendeskripsikan kesiapan guru dan siswa menghadapi era masyarakat 5.0. Jenis penelitian ini adalah penelitian kualitatif deskriptif yang menggunakan beberapa SMA se-Kabupaten Batang sebagai sampel. Peneliti memilih 5 sekolah swasta dan negeri secara acak. Observasi dan wawancara dipilih untuk mengumpulkan data. Yang diwawancarai adalah guru, siswa, dan kepala sekolah. Data penelitian ini dianalisis dalam 3 langkah yang mengacu pada teori Miles dan Huberman yaitu pemadatan data, penyajian data, dan penarikan dan analisis data. Hasil penelitian ini dapat disimpulkan bahwa pendidikan masyarakat 5.0 belum dapat diterapkan di beberapa SMA. beberapa evaluasi harus dilakukan dalam mempersiapkan pendidikan masyarakat 5.0. misalnya, beberapa evaluasi infrastruktur, kualitas sumber daya manusia, dan beberapa kerjasama dengan industri. Itulah beberapa faktor yang harus menjadi perhatian kita dalam mewujudkan pendidikan masyarakat 5.0.

Kata kunci: Society 5.0; Pembelajaran; Analisis Kesiapan; Pendidikan berbasis teknologi.

ABSTRACT

Rapidly developing technology has changed all technology-based education systems. Some have benefited from technology, although it should be introduced further in utilising it. In the era of Society 5.0, the readiness of the utilising technologies should be prepared. So, integrating technologies in teaching and learning is a must. This research aims to describe the readiness of teachers and students to encounter the society 5.0 era. The type of this research is descriptive qualitative research that utilized some senior high schools of Batang regency as the sample. The researcher chose 5 private and public schools randomly. The observation and interview are chosen for collecting data. The interviewees are the teachers, students, and the principal. The data of this research are analyzed in 3 steps which are refers to the theory of Miles and Huberman they are data condensation, data display, and data drawing and analyzing. The result of this research can be concluded that the education of society 5.0 cannot be applied to several senior high school. some evaluation should be conducted in preparing the education of society 5.0. for example, some evaluation of infrastructure, qualified of human resources, and some collaboration with industries. Those are the several of factor that should be paid attention for us in accomplishing the education of society 5.0.

Keywords: Society 5.0; Teaching and Learning; The Readiness analysis; Technology-Based Education System

INTRODUCTION

Development of technology has developed rapidly. It has changed all of the systems to be technology-based systems. It becomes a new problem in education. Many schools are not ready in developing technology-based learning. Several factors should be considered. Such as the knowledge of technology, lack of facilities to bolster up the teaching and learning, and qualified of the teacher. The various types of the environment of Indonesia also become an obstacle in education, it may just be a little bit of a problem in education in this new era. Nowadays, senior high school students in this year are categorized in generation Z, which they have understood the technologies. This has related to (Ahmad et al., 2019) that the younger generations were born into technology and need technology to make sense of their world.

The children's interest in technology needs to be balanced in education that is truly appropriate for them. It is one of the efforts to avoid deviation in utilizing technology for children. After conducting some interviews and observation, the researcher has found some facts that many schools do not ready in preparing the education 5.0. It is the reason to know immediately why they are not ready to encounter society 5.0 in education. As we know pandemic the of Education 5.0 forced us to utilize technologies in teaching and learning. In other words, substantively, we have faced society 5.0 right now. The application of technology in the teaching and learning process will not change the entire education system that is already running (Sandybayev, 2020). Otherwise, the application of technology in the learning process will make the students more motivated. The technological approach makes teaching and learning more effective, efficient, and motivating (Kim & Frick, 2011; O'Neil et al., 2005; Wilkinson, 2016).

Several problems are many schools do not have adequate facilities for technology-based learning in all their subjects. Utilizing technology is still odd even during online learning when the pandemic is still going on. After the pandemic, many students, teachers, and schools changed their learning systems to become offline. this is due to a lack of facilities, teacher competence, and some application that are not developed. These barriers do not only occur in a few schools but also in some schools in Batang.

Based on Calp's and Bütüner's view in his research on Society 5.0 stated that future technological developments will utilize artificial intelligence as an innovation for the development of intelligent society in the era after the industrial revolution 4.0 (Calp & Bütüner, 2022). This situation is also being investigated by several researchers on education in the era of Society 5.0, including (Subandowo, 2022) who described educational technology in the era of Society 5.0. The results of this study briefly explain that there is an important role for technology in developing or strengthening learning in the era of Society 5.0. Then in this study also said that the uneven internet is a big problem. In short, in his research, he concludes that the teacher should become an inspiration to their students to develop student's creativity, and teaching and learning should be appropriate to the students' styles. Subsequently, research conducted by (Umro, 2020) is about the challenges of PAI teachers in facing the era of society 5.0. His research found that there were 3 things that PAI teachers needed to prepare in facing the Society 5.0 era. They are problem-solving, critical thinking, and creativity.

According to the background, some obstacles and related research, it can be shortened that this research has similarities with (Umro, 2020) that are focused on the preparation of teachers but, it did not focus on senior high school and is different in research methodology. Then, several obstacles that have been mentioned above will be an obstacle for all the education stakeholders. Some students may be not facilitated well. So, for fulfilling the students' needs, we need to analyze them in depth to find the readiness of education in facing society 5.0. hopefully, this analysis can help overcome the needs of students.

METHODS

Research design

This research is descriptive qualitative research that aimed to describe the readiness of the teaching and learning to encounter the society 5.0 era. This research especially focuses on the senior high school of private or public schools in Batang, Central Java as a population. Then the researcher took 5 samples from Senior High School to find the data by observation and interview. those are SMA Muhammadiyah Tersono, SMA Bhakti Praja Limpung, SMA Bhakti Praja Batang, MAM Limpung, SMA Muhammadiyah Batang. The sample is chosen randomly with the criteria of the school are have student more than 500 students. The researcher interviewed some teachers and the principal of the senior high school.

Data collection

The technique of collecting data for this research is observation and interview. the observation of this research is focused on the facilities of the school, documents such as the lesson plan, the textbook that they used, training certificates, some applications of teaching and learning, the environment of the school, etc. This observation is aimed to find the reality of conditions and situations, whereas the interview is aimed to find the readiness of the human resources such as

teacher training, teacher knowledge, and teacher and students' problem in implementing technology in class.

Instrument

The researcher acted as a key instrument of this research because this research is qualitative research (Bogdan, Robert, 1982). So that the researcher used a semi-structured interview to find the data deeply. To make sure that the data of the interview are valid, the researcher observed some documents that they used and had, then, observed the facilities, and the environment of those schools.

Data analysis

The analysis of the data in this research follows the theory of Miles and Huberman (2014) which has three steps in analyzing the data (Miles et al., 2014). The steps are data condensation, data display, and drawing and verifying. The data that had been taken from the observation and interview should be sorted before being displayed. In short, the data display is the data that allowed to be drawn conclusions or come to the next steps based on the data condensation before.

RESULTS AND DISCUSSION

In facing the education of society 5.0 the equitable infrastructure should be prepared well. It has been clear that the aim of society 5.0 is the integration of society with technology, the reduction of the negative effects of technology, and the creation of societies where technology can be more effective (Yaraş & Öztürk, 2022). It relates to the statement (Nastiti & 'Abdu, 2020) that infrastructure, human resources, synchronization of education and industry, and implementation of technology-based learning media are the main factor that should be sufficient. For example, the quality of internet in the mountainous area become an obstacle, whereas, in a societal era the internet is the main equipment. Then, some aged teacher has no competence in utilizing computer or technologies, which indicate that qualified human resources also have a main role.

The area of the sample in this research still lacks qualified human resources, infrastructure, cooperation with industry, and utilized learning media. Many reasons influence them. Such as lack of training in utilizing the latest technology, unstable internet connection, and lack of collaboration with industry in motivating students to innovate or develop their skills as they need. (Nastiti & 'Abdu, 2020) also said that to produce qualified graduates and good abilities, some schools and colleges should see the student's needs, and utilize the IoT, virtual reality, and artificial intelligence in teaching and learning. In short, the researcher resumes that the necessity of education to encounter society 5.0 is the infrastructure that should be facilitated, quality of human resources that should be paid attention, utilization of technology should be done in teaching and learning, and flexibility of teaching and learning can be done (Dini et al., 2020; Nastiti & 'Abdu, 2020; Windra, 2021). Those opinions are also supported by (Arsana, 2021) that the orientation of era society 5.0 is developing life skills and collaboration.

Based on the data obtained from the observation, the researcher found that some senior high schools still have a problem with the utilization of technology. May see the data observed in table 1.

Categories	SC 1	SC 2	SC 3	SC 4	SC 5
Availability of Internet	Ready	Ready	Ready	Ready	Ready
E-learning system	Ready	No	No	Ready	No
Laboratory of computer	Ready	Ready	Ready	Ready	Ready
Teacher ability in utilizing computer	Some	Some	Some	Yes	Some
A teacher has a certificate of technology training.	Some	Some	Yes	Yes	Yes
In teaching and learning the teacher utilizes technology.	Some	Some	Some	Yes	Yes
The school have collaboration with an industrial company.	No	No	No	No	No
The teacher uses some applications in learning	Yes	Some	Some	Yes	Some
The teacher provides some tasks online or utilises some applications.	No	No	Some	Some	No

In the table above, it can be seen that several schools are still lacking in completing the facilities, human resources, collaboration between the school and some companies, and teaching and learning in the classroom which is integrated with the technology. According to the data, those aspects become important attention that should be developed, relating to the opinion of (Nadeak & Puspa Juwita, 2022), they said that in preparing for society 5.0, every school need to adjust the curriculum, teacher competence, and facilities, learning media, etc. so it can be concluded that several schools had many problems that need to be solved, in other words, that those schools are not ready to encounter the society 5.0.

Those data become valid after conducting several interviews with the educators and principals of them. The researcher divided into 4 categories they are infrastructure, human resources, a collaboration between the school and industry, and teaching and learning. It had been summarized in Table 2 below:

Categories	Interview Results
Infrastructure	<ul style="list-style-type: none"> - Several schools have attempted to complete their facilities such as internet, application, and some equipment for supporting teaching and learning. - The obstacle they face is an unstable internet connection. It is because the school area is mountainous. - The lack of funds to complete the facility has become the biggest factor.
Human resources	<ul style="list-style-type: none"> - Several schools have a policy that all teachers and staff should attend some self-development training. - Several aged and young teachers have trained in utilizing the computer, Microsoft Teams, and some applications of learning media. - Some young teachers have become a pioneer in the development of technology-based learning media.
School Collaboration	<ul style="list-style-type: none"> - Most senior high school doesn't cooperate with some companies in the distribution of labour. - Most school that cooperate or collaborate with some companies is vocational high school.
Utilizing learning media in teaching and learning	<ul style="list-style-type: none"> - Most teachers use some online learning media such as Edmodo, e-learning, Microsoft teams, google classroom, etc. which are frequently used by young teachers who can use it. - In the outside class, some teachers give the exam, or task by using a third application such as google classroom.

Based on the table above, it can be concluded that the readiness of schools in facing the society 5.0 era is not perfectly ready. So many aspects that should be prepared more perfectly. Especially in human resources that need to train well. Another fact is that senior high school is different from vocational high school. Vocational high school can be said to have more demand than senior high school. those are the reason why senior high schools have no cooperation with some industries. The vocational high school are aimed to answer the students' need in developing their skills (Mahbub, 2020; Santoso & Sugiharto, 2022).

The researcher also found that in the lesson plan, some teachers had included several activities that utilized the technology. Such as quizzes at google classroom, Kahoot, Quizizz, Google Forms, etc. however, it's done by a young teacher. It indicates that the principal should evaluate and enforce some policies that each teacher must understand the students' needs in-depth and provide new learning experiences. Another factor that hinders the fulfilment of infrastructure is limited funds, which has the biggest impact. So many principals argue that if they have a lot of funds, they can facilitate their students maximally. They cannot ask their students because of their students' economic background.

Based on the principle of society 5.0, in which all human activities will integrate into the technology, the system education should be prepared intensively. it's also supported by the statement from (Sumani et al., 2022) that the era of society 5.0 is an era that offers a balance

between economic progress and solving the social problem through a system that connected the virtual world and the real world. As we know that learning in the 20th century had been not envisioned (Yaki, 2022). Those have been done while the pandemic covid-19. All education activities change by utilizing the online system. That system is a reflection of society 5.0 which is become a big problem in the transformation of industry 4.0 to the society 5.0 era (Gladden, 2019).

Reflecting on that, the development of technology has been rapid, it makes the system of education should be improved. Qualified human resources will help to fulfil the infrastructure automatically through creativity, critical thinking and need analysis. According to (Nugraha & Rahman, 2021) in preparing for society 5.0 individuals need to have the ability of critical thinking, constructive, innovative, and have an understanding of their learning abilities. In short, the qualities of individuals are the main point of its era. Another determinant is, to fulfil the infrastructure of education society 5.0, the role of governments is the main one. In this case, the government is a regulator of education policies that are implemented on the curriculum in which curriculum is the main foundation of education. From the point of developing curriculum (Nation & Macalister, 2010) state that in developing curriculum many factors should be considered. They are environment, need analysis, and principles of education. In environment analysis, the focus of analysis is on the teacher, students and the teaching and learning situations. Directly, the environment of this era is technology based. We have to realize that the development of technology helps us to obtain education easily (Balci Çömez et al., 2022). So, the teacher should be trained well and able and willing to make their activities more suitable to the student's environment, needs, and styles.

CONCLUSION

This research shows that the education of Society 5.0 cannot be applied to several senior high schools. it may need evaluation to encounter it. Some of them are stability of internet connection, qualified human resources, and collaboration with some industries, even though that collaboration only development of life skills, and the ability to utilize the technologies. It is a challenge for us to encounter society 5.0 and technology is one of the solutions for solving some problems faced by a human.

Additionally, the teacher should prepare several things to encounter this problem physically and mentally in learning continually, such as the desire on learning by utilizing technology continuously and organising the infrastructure that is supported by the institution. In short, teacher readiness does not come from the teacher itself but, also from the institution, the support of infrastructure and the development of soft skills then institutional collaboration becomes important. According to the 5 data, it can be seen that those schools do not have collaboration between some companies. Even so, those data cannot represent another senior high school in Batang.

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