

# E-Learning: A Study of Readiness and Social Environment Factors Rural Student of Studying Design and Technology Subjects.

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*Abstract*: The implementation of online learning has its advantages and disadvantages. Online learning is proven by implementing this method during the Covid-19 Pandemic that hit the country from 2020 to 2021. However, this learning method is suitable to continue to be used to overcome the problem of students dropping out of school due to the need for public transport. This paper aims to examine the willingness of rural students to follow online learning and the social environment factors of rural students in studying Design and Technology subjects. The study was conducted in Keningau, Sabah. Involving 207 junior high school students at Sook National High School. The sample selection was made randomly from first, second and third-grade students. The instrument used is an adaptation of the study of Siti Nurbaizura and Nurfaradilla (2020). The study's findings show that students' willingness to follow online learning is high, with a mean value of 3.88 (SP=0.70). The social environment factor recorded a relatively high value for all the six factors studied, which was 3.02 (SP=0.48). Findings show that the social anxiety factor regarding parental support, knowledge and skills about technology and two-way communication between students by holding hybrid learning sessions. This action can overcome the problem of students dropping out of school due to the need for public transport and other factors.

#### IndexTerms - Readiness, immersion students, Technology Design, online learning.

## 1.INTRODUCTION

Living in an atmosphere of new norms requires actions that are out of the ordinary (Sandeep Krishnamurthy, 2020). Never in history has the student teaching method changed so quickly from face-to-face teaching to online teaching using digital technology equipment (Zimmerman, 2020). It happened because of the Covid-19 epidemic crisis that hit the world and changed the existing teaching methods. When face-to-face learning activities cannot be carried out, teaching and learning methods from home or Home Base Learning (HBL) are used. As a result, the landscape of the education system has also changed to ensure that students continue to have the right to learn.

Along with the development of Industrial Revolution 4.0 (IR 4.0) and the Internet of things (IoT), there are changes to teaching and learning methods in the world of education (Rosnani, 2018; Mohammad et al., 2020). The online teaching method is a new method that is very suitable for use in primary, secondary and higher education institutions. Online teaching methods can encourage informal discussion, dialogue, support, collaboration and sharing of knowledge openly (Mohamed Amin, 2013). Developed countries such as the United Kingdom, Ireland, the United States, Singapore and Hong Kong that have advanced technology have long been applying learning using technology and virtual learning (Siti Aminah, 2013). In contrast to Malaysia, the use of online teaching and learning methods at primary and secondary school levels is still low. (Department of Education Technology, 2017).

The implementation method for off-site learning in Malaysia follows the Malaysian Ministry of Education's Circular Number 8 2016 Guidelines for the Management of Teaching and Learning Due to Disasters. It can also happen independently or with the guidance and assistance of the Academic Support Team (AST), which consists of school teachers or appointed PPD officers. Teaching and learning from home or online can be done when there is internet access and the use of devices to enable students to learn directly according to the set time. For students who do not have internet access, teaching sessions can be done offline using other learning materials. Off-site learning is a learning method in a location such as a community centre or any premises declared as a temporary evacuation centre due to an epidemic or disaster. This teaching and learning are carried out at home, community centre, or any suitable location, and it is carried out in a structured and planned manner. It is implemented in a certain period because students cannot attend school due to disasters, epidemics, or other reasons without state approval (Ministry of Education Malaysia, 2020).

During the outbreak of the Covid-19 pandemic, the Malaysian Ministry of Education has recommended that teachers use Google Classroom as a teaching and learning medium. The level of student readiness in following online learning is very important. Kaviza's study (2020) found that the level of student readiness for using the Google Classroom application was moderate. Fitrinintiyas, Umammah and Sumardi (2018) reported that 85 per cent of students still need to learn and have used the Google Classroom application widely in their teaching and learning process. The main issue faced by rural students, in particular, is learning to adapt to new teaching practices (Noor et al., 2021; Aziz et al., 2021, Anuar, 2020)

The problem of internet access is also a factor that greatly affects the online learning process faced by most rural schools. Many rural schools face internet network problems, making it difficult for online learning sessions to be implemented. According to Losius et al. (2020), the issue of internet access is a challenge teachers face when implementing online learning. The issue of internet access is a significant factor that causes students to be unable to engage in learning. The findings of a study by Luqman (2020) show a huge gap in internet distribution between urban and rural areas which is 70% in urban areas and 30% in rural areas. This study's findings align with the opinion of Abdul Karim (2020) and Bernama (2020), who state that internet access, especially in rural areas, is limited.

Faris Daniel's report (2020) who had an interview with Associate Prof. Dr Siti Aishah Hasan, Counselor Department of Counseling Psychology, Universiti Putra Malaysia, stated that parents from the B40 and M40 groups are a group that is very affected by teaching and learning from home that is done online because these parents only have one smartphone that they have to share with children for online class learning purposes. This statement aligns with Anuar's (2020) study, which found that parents cannot provide gadgets like personal computers and tablets. It makes it difficult for students to follow online learning sessions. Parents in rural areas need regular financial resources, making it difficult for them to provide the gadgets students need for learning. In fact, according to UNICEF study data (2020), it was reported that nine (9) out of 10 children use mobile phones as a tool to attend online classes, and eight (8) out of 10 children do not have access to attend online classes using a computer. A study by Losius et al. (2020) found that 16 per cent of students did not have a smartphone and had to share it with other siblings, which caused the problem of quickly running out of parents' phone data.

Parental support and monitoring of student engagement during online classes are very important. Irfan Fauzi and Iman Hermawan (2020) and Ramakanta and Sonali (2020) in their study found that parents do not support children in learning from home. This makes their children not interested in taking online classes. Aziz et al. (2020) found that many students need help participating in online classes. Pupils are also not focused because some parents work and have to put responsibilities such as cleaning, taking care of younger siblings, doing homework and so on to the children.

Irfan et al. al. (2020) found that 73.9% of teachers stated that online learning during the Covid-19 epidemic was ineffective due to the factors of facility facilities, unstable internet access networks, ineffective planning, implementation and assessment of learning as well as the cooperation of parents who are still at an unsatisfactory level. This study's results show that the effectiveness of online learning on student learning still needs to be at a higher level. Online learning illustrates that students are still not ready to teach and learn from home during the pandemic. This aligns with a study by Nor Shahrah and Zulkarnain (2021), who stated that student readiness is low due to socioeconomic factors (family income) and a lack of technical facilities such as computers, mobile phones and others.

Although there are many weaknesses reported in previous literature regarding the implementation of online learning methods, this learning method is seen as very appropriate and relevant to be used in the post-Covid-19 pandemic era for students in rural areas. This is because various scenarios sometimes do not allow students and teachers to attend school. For example, in the context of this study, Sook National High School is located in an area quite far inland. There are frequent flooding problems; inadequate road facilities make entering difficult for public vehicles. Therefore, this study was conducted to obtain students' views on their willingness to follow online learning and the challenges faced. This study is important to improve the existing system and implementation to enable online learning methods to continue in the post-Covid-19 pandemic era.

## 2. NEED OF THE STUDY.

## 2.1 Design and technology

Design and Technology (RBT) is a new subject that replaces the Integrated Life Skills (KHB) subject implemented in our country's education system since 1989. This subject is under the Standard Secondary School Curriculum (KSSM). It is offered to students in one to the third form (Ministry of Education Malaysia, 2015). There have been significant changes in learning standards that are more geared towards design ideas, using the latest manufacturing technology, more structured problem-solving methods, and project production. Implementing the new curriculum of RBT subjects is seen to provide students with the knowledge and skills needed in today's world. The Ministry of Education instils the desire and determination to improve the quality of student life in line with the aspiration of placing Malaysia in the best group in the world (Ministry of Education Malaysia, 2013).

RBT subjects are practical subjects that emphasize technology integration in learning and are designed to develop students' potential in a comprehensive, balanced and integrated way. Teachers teach based on learning standards, and to assess the level of performance of students' understanding and mastery, teachers refer to performance standards that the Malaysian Ministry of Education has prepared. Performance evaluation is based on appropriate rubrics to ensure student mastery. The emphasis on technology integration in RBT learning is designed to develop students' potential in a comprehensive, balanced and integrated manner. Apart from that, RBT subjects are also closely related to design criteria that use manufacturing technology and product construction optimally and combine with skills from various fields such as Agricultural Technology, Technical and Household Science (Mohamad Nurul Azmi Mat Nor & Nurzatulshima Kamarudin, 2017).

In RBT subjects, students need to carry out hands-on activities and tasks. Students need to complete practical tasks such as building a digital portfolio, developing a product, preparing a poster and so on. This activity requires students to be prepared and have the knowledge and skills to find support and reference materials using the computer through search engines such as google, YouTube and various applications.

## 2.2 Online Learning

Based on the Education Development Plan (2013-2025), online learning aims to improve the quality of education by improving self-based learning through information and communication technology (ICT). According to Sandeep (2020), learning activities cannot be done face-to-face during the pandemic, where teachers have to carry out the learning process from home or online using technology platforms such as Google Meet, Zoom, Microsoft Team, Google Classroom, WhatsApp, Telegram and so that students

do not drop out to follow the teaching and learning process. The online learning process has been modified and greatly impacted students (Mohamed Nazrul, 2020). Nowadays, people's daily activities are greatly influenced by the development of online technology such as "Virtual and augmented reality', "live streaming' and other technologies (Mohd Nazri, 2017).

Two types of resources are needed in the development of online learning, namely technology and digital (Zhu, 2020). Among digital resources are teaching through platforms, video conferences, educational videos, social media networks and more (Shakah et al., 2019). While in terms of technology, the sources are laptops, tablets, desktop computers, televisions and smartphones (Laskaris et al., 2019). Therefore, if students and teachers have both of these resources but need better access to the Internet, it will be one of the challenges in the teaching and learning process.

Online learning this method can form students' thinking that is more critical and creative and allows students to do selflearning effectively; this is supported by the study of Hamdan et al. (2013), stating that through the application of technology, students can (i) increase their potential to master a certain lesson content, (ii) give feedback during learning and (iii) interact among students during online discussions. A study by Robiah and Nor Sakinah (2007) states that through online learning, students' minds will be more creative, critical and innovative and can be formed through technology. Students have the opportunity to explore knowledge in more depth in addition to getting guidance from the teacher.

Online learning has advantages such as minimising time and effort so that energy is minimized to do other activities outside of class time (Nugraha et al., 2020). However, according to Ayusi et al. (2021), students focus less on learning because of a less conducive learning environment, the problem of insufficient internet data quota or internet packages and other distractions. Teachers need to play an active role and care about relationships and communication with each other.

Online learning is not only suitable to be applied during the outbreak of Covid-19 but this method has been used by countries such as the United Kingdom, Ireland, the United States, Singapore and Hong Kong, which have technological advances and have long applied learning using technology and virtual learning (Siti Aminah, 2013). This method is also suitable for use when students cannot meet with the teacher due to other factors such as natural disasters such as floods, transportation problems, and the distance between the student's home and the school is too far. In this study, the learning method was found to be appropriate because the school is located far inland. No public transport or good road facilities make it difficult for free vehicles to go to the school in and out of the student village area. So teachers and students can continue the teaching and learning session if they lose land connection. Online learning can prevent students from dropping out of school and still be able to follow learning from home and complete assignments for assessment purposes.

#### 2.3 Availability

Student's readiness for live online learning is believed to be a prerequisite for an effective learning process and educational achievement (Dangol & Shrestha, 2019). Student readiness for online learning still needs to be satisfactory. Compared to classroom learning. Online learning requires higher basic computer skills (Sun et al., 2020). Student attendance during traditional face-to-face teaching is more numerous, and teachers can monitor well when compared to online distance learning does not guarantee student attendance. Thus it is difficult to determine the level of student concentration during online learning (Cheon, 2012; Li & Yang, 2016). Student readiness for online learning was first suggested by (Warner, 1998). McVay (2000) refined it and proposed two dimensions of readiness for online learning that, include "comfort with e-learning" and "self-learning management." Later, Hung (2010) expanded the conceptual domain of student readiness for online learning and presented its five dimensions: self-directed learning, motivation for learning, student control, computer & internet self-efficacy, and online communication self-efficacy.

Hung (2010) In his study stated that the online learning environment is delivered through an internet network. Therefore, computer and internet and online communication self-efficacy need to be present in students to carry out activities related to online learning. A study by Jung, Kudo and Choi (2012) states that students through the online learning process will face problems related to psychological aspects, such as emotional stress and anxiety because they have to deal with problems such as poor internet connection, learning time or problems with the device used. This will help their learning process. In this study, student readiness is very important to know. To what extent are students ready to continue learning online in the post-pandemic phase of Covid-19, and what factors of the student's social environment help in successful online learning for Design and Technology subjects? The results of this study can provide input to school administrators, teachers and parents in providing the best learning medium for children, especially for students in rural areas.

#### 2.4 Theory

#### **Connectivism Learning Theory**

Connectivism learning theory was introduced by George Siemens (2005). This theory is an alternative to learning in the digital age. This theory is used for the digital era and was developed because it is believed that the previous learning theories, namely, Behaviourism, Cognitivism and Constructivism, still need to meet the nature of teaching and learning in today's digital age. This technology has changed life, learning and communication, whereas traditional teaching and learning methods have also changed according to digital format following technological changes. Connectivism explains that student learning occurs when students connect ideas from various sources and technologies (Bell, 2009; De Vriendt, 2015; Duke et al., 2013; Dunaway, 2011). Apart from that, this theory also emphasizes the relationship and interaction of users in the network of social networks using digital technology (Shriram & Warner, 2010; Smidt et al., 2017). Through the Connectivism learning theory, the implementation of online learning for Design and Technology subjects at the current time is suitable because this learning process is supported by a digital environment built through networks, relationships and interactions. According to Shriram and Warner (2010) and Smidt et al. (2017), Connectivism learning or network learning is the basis of a learning process that adapts the principles of constructivism to something informal, supported by technology and connected through a network of relationships.

George Siemens (2005) lists the principles of Connectivism, such as diversity of opinion, i.e. learning and knowledge have the diversity of opinion; the network connection process at specific nodes means that learning is carried out by connecting information sources in specific nodes. In addition, learning can happen outside of the human being. The ability or capacity to know more is more important than what is known now. This principle also states the need to maintain important learning network relationships so that learning takes place continuously. The main thing is seeing the relationship between various fields, ideas and concepts. The latest knowledge is an activity in Connectivism learning; decision-making is a learning process, and the ability to choose what is learned is very important in the face of information density and rapid changes in information that will affect a decision.

Through online learning, students can still form active learning among students. Although students and teachers are physically separated, this relationship can be overcome through interactions in the network between teachers and students, students with students and students with learning resources. This interaction can be further strengthened with a good network and internet network so that we can stay interacting, collaborating and getting the necessary learning information. In addition, through online learning, students can reflect, interact and collaborate in a connected and open environment. The implementation of online learning with the use of technology in the teaching and learning of students for design and technology subjects online during the Covid-19 pandemic has the characteristics of Connectivism in which students have autonomous power in the learning process, connected in the network, diversity of opinion and openness resources through the network of applications used during learning.

## **RESEARCH METHODOLOGY**

#### **3.1Population and Sample**

This study's population is junior high school students who take Design and Technology subjects. A total of 426 students form one (1), two (2) and three (3) at Sekolah Menengah Kebangsaan Sook, Keningau. From that number, 207 students were used as a study sample based on Krejcie and Morgan's Table (1970). The selection of the study sample was made randomly and systematically to select the study sample.

## 3.2 Data and Sources of Data

In this study, a set of questionnaires is divided into 4 parts. Part A relates to student background information, part B relates to the level of student readiness for online learning, and Part C relates to the factors of the student's social environment during the implementation of online learning, which consists of knowledge and skills related to the use of technology, two-way communication between students and teachers, student internet access, technology device facilities, skills in using social media, email and online education platforms as well as parental support. The built research instrument was adapted from the study of Siti Nurbaizura and Nurfaradilla (2020). Questionnaire parts B and C use a 5-point Likert scale from one (1) strongly disagree, two (2) disagree, three (3) less agree, four (4) agree, and finally, a scale of five (5) Strongly agree.

A pilot study was conducted to check the reliability of the instrument. The researcher selected a total of 30 students to conduct a pilot study. A pilot study was conducted on 1st, 2nd and 3rd-grade students taking Design and Technology subjects at Tulid National High School, Keningau. The Cronbach alpha value obtained is 0.89, which shows that the developed questionnaire is suitable and can be used. This is because a coefficient value greater than 6.0 has a high-reliability value (Cohen et al., 2013). The researcher also obtained the instrument's validity from an expert in the field under study, namely a lecturer in the field of Technical and Vocational Education from Universiti Putra Malaysia (UPM)..

Data were collected and analyzed using SPSS version 26.0. Descriptive statistical analysis involves mean and standard deviation. The interpretation of the mean score is based on a five-point Likert scale, which is divided as suggested by (Best, 1997).

## IV. RESULTS AND DISCUSSION

4.1 Rural Students' Readiness For Online Lea	rning For Design A	And Technology Subjects.
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No	Items	Mean	SP	Interpretation
B1	I am willing to follow online learning at home	4.14	1.09	High
B2	I use the design and technology training modules provided by the teacher as learning materials at home	3.76	1.09	High
B3	I use online learning resources such as YouTube and Google to study at home	4.19	1.03	High
B4	I use learning communication applications such as Google Classroom, Zoom or Google meet to study at home	3.62	1.17	Moderate
В5	I completed the school assignments related to Design and Technology given by the teacher easily while following the online learning	3.86	1.16	High
B6	it is easier for me to understand design and technology learning topics when following online learning.	3.46	1.29	Moderate

B7	I can easily find reference materials related	4.11	1.12	High	
	to topics studied in Design and				
	Technology subjects online.				

## Table 1: Willingness Of Rural Students To Follow Online Learning For Design And Technology Subjects.

The findings in Table 1 show that students' readiness for online learning is at a high level, mean of 3.88, SP=.0.70. The analysis showed that all seven items recorded mean values ranging from 3.46 to 4.19. The mean value of item B3, "I use online learning resources such as YouTube and Google to study at home", recorded a high value (M=4.19, SP 1.03). Meanwhile, item B6 "it is easier for me to understand the topic of Design and Technology learning while following online learning," recorded the lowest mean value with a value of (M=3.46, SP 1.29). This finding shows that students need help understanding if they follow online learning. However, students can use online learning by making additional references through the YouTube application and the Google information search engine.

#### 4.2 Social Environment Factors For Following Online Learning For Design And Technology Subjects.

Bil	Cabaran	Skor Min	Sisihan Piawai	Interpretasi
1	Pengetahuan dan kemahiran berkaitan penggunaan teknologi	4.04	0.63	Tinggi
2	Komunikasi dua hala antara murid dan guru	3.92	0.64	Tinggi
3	Capaian internet murid	3.64	0.84	Sederhana
4	Kemudahan peranti teknologi	3.39	0.81	Sederhana
5	Kemahiran menggunakan media sosial, email dan platform pendidikan dalam talian	3.90	0.70	Tinggi
6	Sokongan ibu bapa	4.02	0.62	Tinggi

Table 2: Social environment factors for following online learning for design and technology subjects in rural area

Table 2 shows the high overall mean value for the measured social environment factors. The social environment factor of advanced students in terms of knowledge and skills related to the use of technology M=4.04 (SP=0.63) is high, followed by support from parents is also high with a mean value of 4.02 (SP=0.62). Regarding the two-way communication factor between students and teachers, the mean value is 3.92 (SP=0.64), skills in social media, email and online education platforms (M=3.90, SP=0.70). However, it was found that the social environment factor regarding the convenience of technology devices and students' internet access recorded a relatively low mean value with a reading of M=3.39 (SP=0.81) and M=3.64 (SP=0.84). This finding shows that rural students know technology use and receive excellent support from their parents during online learning. However, the problem of incomplete technology device facilities and unstable internet lines causes students not to follow online learning. Overall, the factors of the student's social environment are very helpful for students to follow online learning.

#### V. DISCUSSION 5.1 Readiness

This study's findings show that rural students' willingness to follow online learning is high. The findings of this study are in line with the study conducted by Rozelia and Nur Farahkhanna (2022), stating that most students know and are ready to follow online learning when most of them have their gadgets, a good internet access network to enable them to follow teaching and learning sessions in depth line. Although students report that they lack understanding when following online learning for Design and technology subjects, they get other benefits, such as being able to find materials using online learning resources such as YouTube and Google, even students also feel that it is easy for them to get materials references related to topics studied online. This finding indirectly gives the impression that online learning can improve students' knowledge and skills for technology literacy. This finding supports the government's intention through the Malaysian Education Development Plan to ensure that all students master digital skills and utilize information and communication technology to improve the quality of learning in Malaysia in the future. Although most of these students live in the interior of Sabah, they continue to follow online teaching and learning. Connectivism theory explains that student learning occurs when students connect ideas from various sources and technologies (Bell, 2009; De Vriendt, 2015; Duke et al., 2013; Dunaway, 2011). Rural students can also complete school assignments related to Design and Technology subjects given by the teacher and easily obtain reference materials related to the learning topics taught; this shows that the selection of online learning methods is effectively supported by previous studies by Larson and Vontz, (2018). ; Shelton et al., (2017) and Wei & Chou, (2020) who stated that online learning was found to be effective and suitable for use in education when facing the situation of the COVID-19 pandemic.

## 5.2 Social environment factors

## 5.2.1 Knowledge and Skills related to the Use of Technology

The research findings for the challenges of knowledge and skills related to the use of technology show a high level among rural students. This shows that the rural students in this study have knowledge and skills in using applications such as Telegram,

Whatsapp, but are less proficient in Google Classroom and Google Meet applications. In addition, they also have knowledge and skills on how to obtain learning information resources by using technology devices such as smartphones and laptops. According to Kuppusamy and Norman (2021) through this method, combining technology provides more useful time for students. This shows that there are rapid changes in the world of education that allow teaching and learning to be done online (Rusdiana et al. 2020).

#### 5.2.2 Two-Way Communication between Students and Teachers

The findings of the study show that two-way communication between rural students and teachers is very good. This shows that there is good two-way communication between rural students and teachers using applications such as Whatsapp and Telegram for teaching and learning purposes. Pupils also make topic-related discussions if there are learning topics that are not understood through the available application channels. This shows that online learning is the best step to ensure students continue to learn. According to Norfiza et al. (2021) online learning used to deliver lessons is a practical and effective medium implemented throughout the MCO period. The study also proved that students, especially teenagers, like the differences found in online learning methods. In the study of Siti Nor Lailiyah, Yusmaria and Zulkurnain (2021) stated that online learning is very suitable to be implemented as an alternative to learning new norms in line with current technological developments.

#### **5.2.3 Student Internet Access**

In terms of internet access challenges, the findings of the study show that internet access in the study location is at a moderate level where students can still follow online learning, however, sometimes students are unable to follow online learning due to unstable internet network problems that often occur. The findings of this study are in line with the findings of a study by Luqman (2020) showing that there is a huge gap in internet distribution between urban and rural areas which is 70% in urban areas and 30% in rural areas. The findings of this study are in line with the opinion of Abdul Karim (2020) and Bernama (2020) who stated that internet access, especially in rural areas, is limited and this is a factor of the social environment faced by students who study online during the epidemic period. The study of Siti Nor Lailiyah, Yusmaria and Zulkurnain (2021) states that the attitude and motivation of students can be affected due to factors such as internet access problems, but it cannot be used as an excuse for students not to follow teaching and learning online because generally teachers have also try as much as possible to diversify skills to achieve the learning objectives that have been set.

## 5.2.4 Technology Device Facilities

The findings of technology device facilities show that rural students have technology device facilities at a moderate level. This shows that although rural students have gadgets to follow online learning, rural students also need comfortable gadgets for learning. A study by Losius et al. (2020) found that 16 per cent of students do not have a smartphone and have to share it with other siblings, which causes the problem of quickly running out of parents' phone data. The findings of this study align with those by UNICEF (2020), which found that 8 out of 10 children do not have access to a computer, and 9 out of 10 children only use mobile phones as a tool for online learning. Most students have to share mobile phones with parents and other siblings; this makes it difficult for students to follow their studies at home during the pandemic period.

## 5.2.5 Skills in Using Social Media, E-Mail and Educational Platforms

Findings for skills in social media, E-mail and online education platforms show that rural students know how to use Whatsapp and Telegram applications to receive and send their assignments. However, they could be more skilled when using Google Classroom or Google Meet applications for learning purposes. The results of this finding aligned with the study of M. Kaviza (2020), stating that the level of student readiness to use the Google Classroom application is moderate. This study is also supported by the findings of Fitrinintiyas, Umammah and Sumardi (2018), who reported that as many as 85% of students still need to learn and have used the Google Classroom application widely in their teaching and learning. Students need to find out first about the use of applications used by teachers to make it easier for them to follow online learning well.

#### 5.2.6 Parental Support

As for parental support, this study shows that parents are very cooperative in monitoring their children to follow online learning. However, due to work factors, some parents need more time to monitor attendance and check the school assignments given by the teacher. The results of this study align with studies by Irfan Fauzi and Iman Hermawan Sastra Khusuma (2020) and Ramakanta and Sonali (2020), who study found that parents do not support children in learning at home. This makes their children not interested in taking online classes. Even Aziz A. et (2020) found that many students need help participating in online classes. Pupils are also not focused because some parents work and have to put responsibilities such as cleaning, taking care of younger siblings, doing homework and so on to the children.

## 6. CONCLUSION AND SUGGESTION

The study's findings show that rural students' readiness level is high. This shows that students in the interior of Sabah, especially Sook National Secondary School students, are very willing to follow online learning for Design and Technology subjects. As for the social environment factor as a whole, it shows a medium to a high level where these students have knowledge and skills about the use of technology and gets good support from their parents while following online learning through the platform used by their teachers. However, there are a few problems with internet access, resulting in these students sometimes needing help to follow online learning for Design and Technology subjects. Therefore, researchers suggest that the Malaysian Ministry of Education can provide learning facilities such as complete facilities and a more stable internet access network to ensure that students in these rural areas can follow online learning better in the future. Nor Shara and Zulkarnain (2021) found that guaranteeing the willingness to undergo online learning requires a good device and internet facilities so that the effectiveness of the learning session becomes more positive and meaningful. The social environment factors students face need to be considered when implementing online learning to ensure that students stay caught up in learning in line with the development of the world of education. Rozeila and Nur (2022) stated that students must be prepared with enough equipment before the online class starts to make the virtual teaching and learning session successful. Apart from that, the findings of this study are important for the Keningau District Education Office (PPD) to see more

clearly the problems faced by rural students who cannot go to school to study due to various other factors such as public transport problems, poor road conditions or problems caused by natural disasters such as floods and so on. Therefore, the results of this finding can be used as a guide to planning learning sessions, such as online learning, in various emergencies as they occur from time to time. Although the findings in this study cannot be generalized to all rural students who take Design and technology subjects, they should be taken seriously by the responsible parties. A more in-depth follow-up study is expected to be conducted using different research methods, additional variables and locations of respondents in other areas to reach better conclusions.

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