Effectiveness of Using Hotspot Facilies The Internet as a Learning Resource for TJKT Students at SMK Negeri 1 Kupang

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Abstract

The purpose of this study was to determine the effectiveness of using internet hotspot facilities as one of the learning resources for TJKT students at SMK Negeri 1 Kupang from the perspective of students and to provide solutions to the obstacles faced by TJKT students in using internet hotspot facilities as one of the learning resources at SMK Negeri 1 Kupang. In this study, the approach used was a quantitative approach. By using a quantitative descriptive method, reviewed from the form of data and analysis techniques, it is included in the quantitative approach, because the data obtained is in the form of numbers and is resolved using statistical methods. The test results using the Sigmon application showed variations in connection quality at various hotspot points. Although in general the download and upload speeds are sufficient for browsing and downloading files. This can be influenced by several factors, such as distance from the router, number of users, and signal interference. The average speed of the hotspot speed test in class XI TJKT 4, the average value of the download speed is 63.89 mbps, for uploading 61.14 mbps. And for class XI TJKT 5, the average download speed is 138.92 mbps, for uploading 103.35 mbps. For speed measurement using the SIGMON speed test application, the average value of the download speed is 47.21 mbps, for uploading 40.19 mbps. The results of the study indicate that the use of internet hotspot facilities at SMK Negeri 1 Kupang is very effective in increasing student access to learning resources. It is proven that there is a significant relationship between the use of internet hotspot facilities and increasing student access to learning resources at SMK Negeri 1 Kupang.

Keywords: Effectiveness, Internet hotspots, and learning resource

INTRODUCTION

Humans have developed from time to time, experiencing progress in technological development. The development of human resources makes humans capable of creating extraordinary technologies. The technology that is currently developing rapidly is the internet, because the internet is a relatively complete source of information in this world. As stated in news sourced from Merdeka.com (2014) "Based on research conducted by the UN's international communications agency, ITU, internet users worldwide will reach 3 billion by the end of 2014. This is due to massive technological growth in developing countries." With the internet, it will be very easy and fast for us to get the latest information from all corners of the country, both within the country and abroad. The presence of the internet has brought revolutionary changes to the way of life and daily human activities.

The internet exists as a medium that integrates all existing conventional communication and information media.

Through the internet, everyone can access the global world to obtain the various information they need. The internet is very supportive in the world of education because with the internet it will be very easy for students to obtain the latest information that they may not get at school. Apart from searching for information, the internet can also be used for chatting, sending emails and browsing. The growing need for flexible, easy and safe wireless connectivity is now very much needed to support daily life without having to install and pull cables here and there.

Hotspots are something that is very much talked about nowadays. Hotspots are everywhere and there are many locations where hotspots are implemented, one of which is in educational environments such as schools. In the world of education, the internet will be very good and very effective to use as a learning resource. As stated in news sourced from Tribunnews.com, Jakarta (2014) "The management of PT Telkom Witel South Sulawesi is currently still focused on working

on information technology (IT)-based services in the education sector in South Sulawesi.

With the internet, students can search for wider learning materials about information and communication technology. Apart from that, to encourage students to become familiar with the internet, teachers can provide questions or assignments that are delivered via the internet so that it requires students to open the internet. SMK Negeri 1 Kupang provides free internet hotspot facilities for students. Students can access the internet using student personal devices such as laptops, smartphones and tablet PCs. Based on the results of the researcher's interview with the head of the TJKT department at SMK Negeri 1 Kupang, Kupang has 5 hotspots and the hotspot bandwidth strength or speed is 800 MB, used by approximately 500 students, consisting of 4 internet services, namely, IndiHome, Bisnet, Icon+ and Indibiz. In this context, it is necessary to understand that students' perceptions

regarding internet hotspot facilities as an unlimited learning resource has not been fully realized at SMK Negeri 1 Kupang. This limitation is largely caused by a lack of direction and support from school principals and teachers regarding the use of the internet for learning. Even though internet infrastructure is available, observations show that some students are more likely to use the internet for social activities and entertainment rather than as a learning tool. This phenomenon underlines the importance of more active educational efforts in directing students to utilize digital resources productively. Technical challenges, such as weak internet signals in some classes, also make optimal access to hotspot facilities difficult. Therefore, to increase the effectiveness of using internet hotspot facilities as an unlimited learning resource, there needs to be a joint effort from schools, teachers and students to improve perceptions, provide clearer guidance and ensure adequate infrastructure. And there are several classes where the signal is weak and it is difficult to access internet hotspots. The internet at SMK Negeri 1 Kupang has not met its intended purpose, namely as a learning resource. By looking at the description above, it would be very interesting if further research was carried out with the title "Effectiveness of using internet hotspot facilities as a learning resource for TJKT students at SMK Negeri 1 Kupang" so that the results of this research are expected to be the basis for thinking and considering the use of internet hotspot facilities as one of the learning resources for students.

METHOD

1. In this research, the approach used is a quantitative approach. Using quantitative descriptive methods, in terms of the form of data and analysis techniques, it is included in the quantitative approach. The place and time of the research was carried out at SMK Negeri 1 Kupang for 11 months, starting from December 2023 to October 2024. In this research the population was all TJKT students in class XII TJKT 4 and XII TJKT 5, and the sample size was 40 students. The data collection technique used in this research was distributing questionnaires, observations and interviews with the same treatment to 40 samples. The data analysis technique used in this research is Using descriptive statistical analysis, namely data analysis which aims to describe the characteristics of the score distribution trends in research variables. For this purpose, the statistics of average, standard, deviation, frequency distribution table, median percentage and mode are used. The data in this research is in a closed questionnaire in the form of qualitative data which is then given a score to obtain quantitative data. The data in the form of numbers can be measured in percentages, then qualitative interpretations can be made into the results. With the pollution of all classes XII TJKT 4 and 1 Kupang, and interviews with 40 TJKT students of SMK Negeri 1 Kupang and observations were also carried out on 40 TJKT students of SMK Negeri 1 Kupang

2. Validity and Reliability Test
The validity test is used to determine the validity or suitability of the questionnaire used by researchers in measuring and obtaining research data from respondents. Validation testing, each item with a total instrument score known as per-Pearson product moment. Below is the basis for taking the Person validity test to compare the r-calculated value with the r-table.
 a. If rcount > rtable = valid
 b. if rcount < rtable = invalid

3. Data collection the data collection process in this research was through distributing questionnaires, interviews and observations, distributing questionnaires
The aim of the rehabilitation test is to see whether the questionnaire has consistency, if measurements are carried out using the questionnaire and used repeatedly. The reliability test in this study used the Cronbach's Alpha method, which is a benchmark used to explain the
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online to students class XII TJKT 4 and class State Vocational School 1 Kupang

4. Validity and Reliability Test
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correlation or relationship between the scale created and all variable scales to assess the extent of the relationship between various variable scales. Below are the results of the validity and reliability tests

Table 1. Validity Test Results

Variable	Item Statement	r_{hiting}	r_{table}	Information
X	P1	0,850	0,312	Valid
	P2	0, 871	0,312	Valid
	P3	0, 814	0,312	Valid
	P4	0,927	0,312	Valid
	P5	0, 899	0,312	Valid
	P6	0,930	0,312	Valid
	P7	0,803	0,312	Valid
	P8	0, 911	0,312	Valid
	P12	0,822	0,312	Valid
	P13	0,940	0,312	Valid
	P16	0,899	0,312	Valid
	P17	0,891	0,312	Valid
	P9	0,770	0,312	Valid
	P10	0,864	0,312	Valid
	P11	0,813	0,312	Valid
AND	P14	0,948	0,312	Valid
	P15	0, 900	0,312	Valid
	P18	0,912	0,312	Valid
	P19	0,908	0,312	Valid
	P20	0,929	0,312	Valid
	P21	0,812	0,312	Valid
	P22	0,842	0,312	Valid
	P23	0,880	0,312	Valid

Table 2. Reliability test results

Reliability Statistics	
Cronbach's Alpha	N of Items
,984	23

Based on the results of the reliability testing shown in table 2, the Cronbach's Alpha results obtained from the data were 0.984. This figure can be interpreted to mean that the data obtained is good and can be used
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RESULTS AND DISCUSSION

In this research, the approach used is a quantitative approach. This research aims to evaluate the quality and effectiveness of facility use *hotspot* internet at SMK Negeri 1 Kupang. Data obtained through surveys, interviews, observations and speed tests has been analyzed to provide a comprehensive picture of network conditions and their impact on student learning activities. The majority of students use the facilities *hotspot* to find references, do assignments, and communicate, Potential use of the internet as a learning resource, wider access to information, students can access wider information with the latest technological developments, students can also use the internet in daily learning activities such as individual assignments, group projects or presentations, downloading materials on the internet in the form of text, audio, video and image data. Data analysis shows significant variations in download, upload and latency speeds at various points *hotspot*. This indicates that there is equality in service quality *hotspot* internet provided. Most students expressed satisfaction with the existence of the facilities *hotspot,* However, there are several suggestions for improving the quality of internet services. There is a positive correlation between good connection quality and increased productivity and student learning motivation. Based on the results of data analysis that has been carried out, the existence of facilities *hotspot* The internet at SMK Negeri 1 Kupang has a significant influence on the use of learning resources by students. Test results using the Sigman application show variations in connection quality at various points *and hotspots.*
of 68.00 ms indicating a fairly good response. Jiter shows a value of 3.00, indicating relatively low variation, which indicates a stable connection.
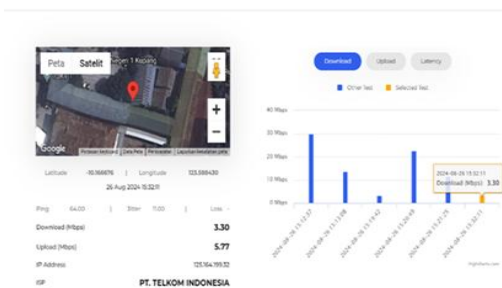

Figure 1. Test results *speed test* SMKN 1 Kupang 4 network

From the test results on the SMKN 1 Kupang 4 network, it is for speed *download*it's 3.30 mbps and the upload speed is 5.77 mbps. Latency measures the time it takes for data to travel back and forth from the device to the server. The bar graph shows latency fluctuations during testing. Ping shows a value
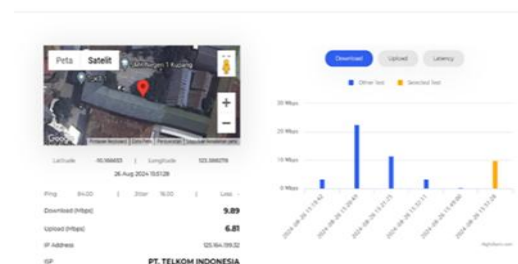

Figure 2. Results *speed test* on the SMKN 1 Kupang 5 network

From the test results on the SMKN 1 Kupang 5 network, the download speed is 9.89 mbps and for speed *upload* is 6.81 mbps, this

value is quite good for activities such as *browsing web* email and downloading files. The bar graph shows fluctuations in speed or network parameters during the ping test period, showing a value of 84.00 ms, indicating a fairly good response time from the device to the server. Jiter shows a value of 16.00 ms showing relatively high variation indicating a stable connection.
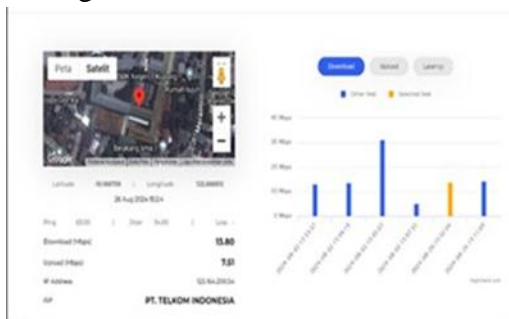

Figure 3. Network speed test results *hotspot* DECO TJKT

Test it on the DECO TJKT network for speed *download it's* 13.80 mbps and for speed *upload* is 7.51 mbps, this value is quite good for activities such as *browsing web* email and download files. The bar graph shows the fluctuation of network speed or parameters during the test period. Ping shows a value of 63.00 ms indicating the response time from the device to *server* which is quite good. Jiter shows a value of 34.00 ms, indicating relatively high variation, indicating a stable connection
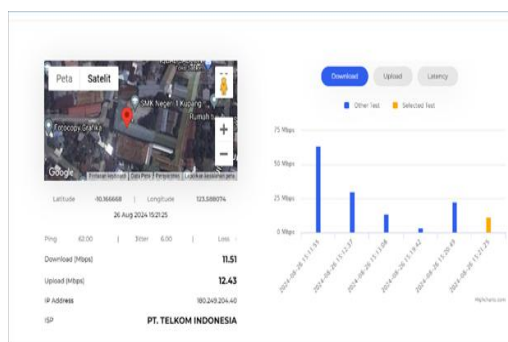
Figure 4. Network speed results *hotspot* SMKN 1 Kupang 6

Tested on the SMKN 1 Kupang 6 network for speed *download* it's 11.51 mbps and for speed *upload* is 12.43 mbps, this value

is quite good for activities such as *browsing web* email and download files. Bar graphs show fluctuations in speed or network parameters during the test period. Ping shows a value of 62.00 ms indicating the response time from the device to *server* which is quite good. Jiter shows a value of 6.00 ms indicating relatively high variation indicating a very stable connection.
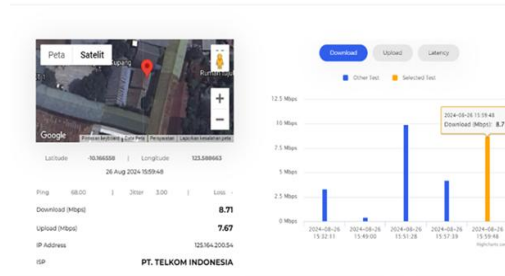

Figure 5. Results *speed test* network *hotspot* SMKN 1 Kupang 3

From the test results on the SMKN 1 Kupang 3 network, the speed is *download it's* 8.71 mbps and for speed *upload* is 7.67 mbps, this value is quite good for activities such as *browsing web* email and downloading files. Bar graphs show fluctuations in speed or network parameters during the test period. Ping shows a value of 68.00 ms indicating the response time from the device to *server* which is quite good. Jiter shows a value of 3.00 ms indicating relatively high variation indicating a stable connection

CONCLUSION
Based on the results of research and testing regarding the use of facilities *hotspot* with the learning resources at SMK Negeri 1 Kupang, the researchers can provide the following conclusions: The results of the research show that the use of facilities *hotspot* internet at SMK Negeri 1 Kupang is very effective in increasing access students towards learning resources. It is proven that there is a significant relationship between the use of internet hotspot facilities and increased student access to learning resources at SMK Negeri 1 Kupang. Then a hotspot network test was carried out using the SIGMON application on 5 internet hotspot points which showed that

there was a stable connection at each hotspot point

SUGGESTION

1. Based on the research carried out, the suggestions given by the researcher as motivation for follow-up actions related to this research are as follows:
2. For School
3. For SMK Negeri 1 Kupang, internet hotspot facilities are available at the school. The school should be able to optimize the use of these facilities for learning purposes and control their use regularly.
4. For future researchers, the author suggests to future authors that this research be developed in order to generate new knowledge about the effectiveness of using facilities *hotspot* the internet as a learning resource for TJKT students at SMK Negeri 1 Kupang.
5. Perform regular network audits to identify and address any performance issues. And implement a robust network management system to monitor network traffic and optimize resource allocation.
6. There is a need for other research regarding efforts to increase the use of internet hotspot facilities as a source of student learning with the aim of improving education in general and formal education in schools in particular. Apart from that, research needs to be carried out regarding the factors that hinder the use of internet hotspot facilities as a learning resource

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