IMPLEMENTATION OF ANDROID-BASED VOCATIONAL STUDENT ATTENDANCE SYSTEM AS AN EFFORT FOR CHARACTER BUILDING STUDENTS IN THE DIGITAL EDUCATION ERA

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Abstract. The presence system in the world of education is the most important role for every teaching and learning activity. In general, schools still use attendance manually, namely by writing in attendance books, this makes inefficiency and errors in data inputting occur. As did SMK Muhammadiyah 7 Gondanglegi, with the number of students reaching thousands, schools still use paper attendance manually. This method is very vulnerable and can be misused by irresponsible parties.

Given these problems, the author will provide a solution, namely creating an information system for reporting student attendance using a QR Code Reader which will be applied at SMK Muhammadiyah 7 Gondanglegi. In addition, this Information System will also be equipped with School Information and School Vision and Mission. From the results of functional testing that has been carried out by students and teachers, by showing the level of accuracy of applications and analysis of student character formation in the current digital learning era, in addition to the presence of an Android-based student attendance information system that uses this Android-based QR Code scanner, it can make it easier the teacher in inputting student data and recording student attendance.

Keywords: Android Based Vocational Student Attendance System

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INTRODUCTION

In the era of increasing globalization and increasingly developing technology, creating a technology to accelerate an activity. The use of computer equipment as a support for data management and processing is very appropriate and very necessary. The use of computer technology technology as an information technology tool in the world of education is very useful to facilitate daily activities. As in the life of computer technology that creates a new program with fast access. Computers have many benefits when used in a positive way and computers can be bad when used in a negative way. Currently the role of information technology is growing, making a lot of human work replaced by the system. Every activity that almost everyone does uses a Smart Phone (smartphone). It is possible that the Smart Phone is used for the presence system. Because Smart Phones are a secondary need for everyone because their functions are more efficient and practical. In the world of education, attendance has an important role for every teaching and learning activity and is one of the educational supports that can support every

activity carried out in it. In general, schools still use the Presence system manually. As was done at SMK .

Muhammadiyah 7 Gondanglegi with the number of students reaching thousands, schools still use the manual attendance system. Still using paper for the student attendance process, namely recording one by one the students who attend school. This method is very vulnerable for an educational institution because the level of discipline cannot be controlled and can be misused by irresponsible people and makes it very difficult for teachers in the process of recapitulating attendance data because they have to copy attendance data one by one into the computer so it takes a lot of time. In this study, the author will implement a Presence system using Android-based mobile technology which is able to overcome some of the weaknesses of the Presence system which has been done manually and tends to be inefficient.

The objectives of implementing this information system are as follows:

1. Implementing an effective and efficient presence information system with android-based applications.
2. Help facilitate the attendance process at SMK Muhammadiyah 7 Gondanglegi.
3. To support the data collection process for student attendance.
4. Provide solutions to school problems in shaping student discipline by using technology.

According to the opinion (Usman, 2002) Implementation is led to activities, actions, actions or the existence of a system mechanism. Implementation is not just an activity, but an activity that is planned and to achieve the objectives of the activity. While the notion of discipline according to. (Ali, Lukman, Dkk, 1997) The word discipline comes from the basic word discipline which gets the prefix ke-an which means obedience (compliance) to regulations (order, and so on). (Homby, 1995) Whereas in English, discipline means: training or control, often using a system of punishment, at producing obedient to rules.

From the three definitions above, it can be concluded that implementation and discipline are related, where discipline and implementation must go hand in hand, where discipline is not just a theory but also an action that must be implemented.

According to (Tata, 2012) a system is basically a group of elements that are closely related to each other that function to achieve certain goals. The definition can be further detailed about the system in general, namely:

1. Every system consists of elements. The human respiratory system consists of a group of elements, consisting of the nose, respiratory tract, lungs and blood. Elements of a system consists of smaller subsystems, which consist of groups of elements that make up the subsystem.
2. These elements form a unifying part of the system concerned. The elements of the system are closely related to each other and the nature and cooperation between the elements of the system have a certain form.

3. System elements work together to achieve system goals. Each system has a specific purpose. Our respiratory system aims to provide oxygen and remove carbon dioxide from our bodies for our survival. System elements in the form of nose, respiratory tract, lungs, and blood cooperate with each other with certain processes to achieve this goal.
4. A system is part of another larger. Our respiratory system is part of the body's metabolism.

From the description of the understanding of the system in general, a question arises "what is a system created for?" (Ariadi, 2011) every system is made to handle something that happens repeatedly or frequently (Suendri, 2015) The systems approach is a philosophy about the structure that coordinates an activity within the organization in the most efficient and best way (Hadinata, 2017) A system can be formulated as a collection of components or subsystems designed to achieve a goal. (Supraptono, 2019) With a systems approach, we deal with individual components and emphasize the role in the system rather than the role as a whole individual. With a systems approach to describe reality, it can be of great benefit to the user. (Sholeh, 2016) The success of the components considered as a system may be greater than the sum of the successes of each component considered separately.

According to Dewi (Dewi, 2018) the Java programming language. The java code is compiled along with the resource files required by the application. Where the process is packaged by a tool called apttools into the android package. This results in a file with an apk extension, called an application, which can later be run on mobile devices. There are four components in an Android application, namely:

1. Activities are components that present the user interface (user interface) to the user.
2. Service is a component that does not have a user interface (user interface), but the service runs in backgrounds.
3. Broadcast Receiver is a component that functions to receive and react to present notifications.
4. Content Provider is a component that creates a specific collection of data applications, so that other applications can use them.

METHODS

The following is a flowchart of the Android-Based Android-based Student Attendance Information System for SMK Muhammadiyah 7 Gondanglegi. This system flowchart describes the process of running the application system

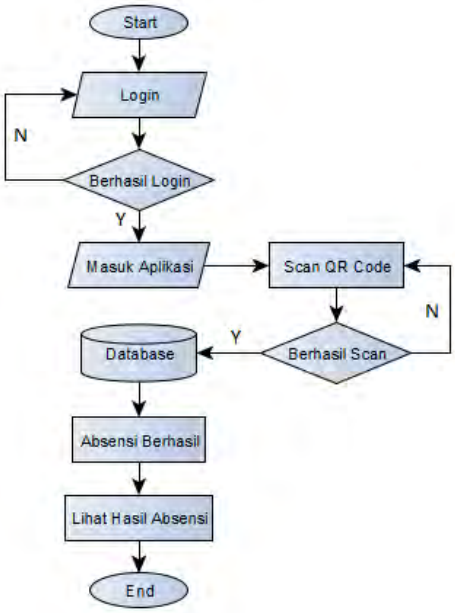


FIGURE 1. *Flowchart Information System*

1. Start, the process of starting the application
2. Login, Master login to the system
3. Login successful?, after logging in, there are two possibilities for successful or failed login. If the login is successful, it will go directly to the next step, if it fails, it will return to the previous step.
4. Scan the QR Code, Attendance process by scanning the QR Code on the student id card.
5. Scan Successful? , there are two possibilities of the scan succeed or fail. If successful, it will continue to the next step, and if it fails, it will return to the previous step for a re-scan.
6. Database, after a successful scan the data will be automatically entered into the database.
7. Attendance is successful, after the data is entered into the Presence database it will be declared successful.
8. View Attendance Results, after the Attendance is successful, the detailed results of the Attendance can be seen.
9. End, Attendance Process is complete

The following is a Data Flow Diagram for designing an Android-Based Information and Reporting System for Student Attendance at SMK Muhammadiyah 7 Gondanglegi. In this system there are two entities, namely teachers and admins, where teachers can login and can make attendance to students.

FIGURE 2. *DFD Information System*

Berikut ini merupakan sequence Presensi pada sistem informasi Presensi pada SMK Muhammadiyah 7 Gondanglegi.

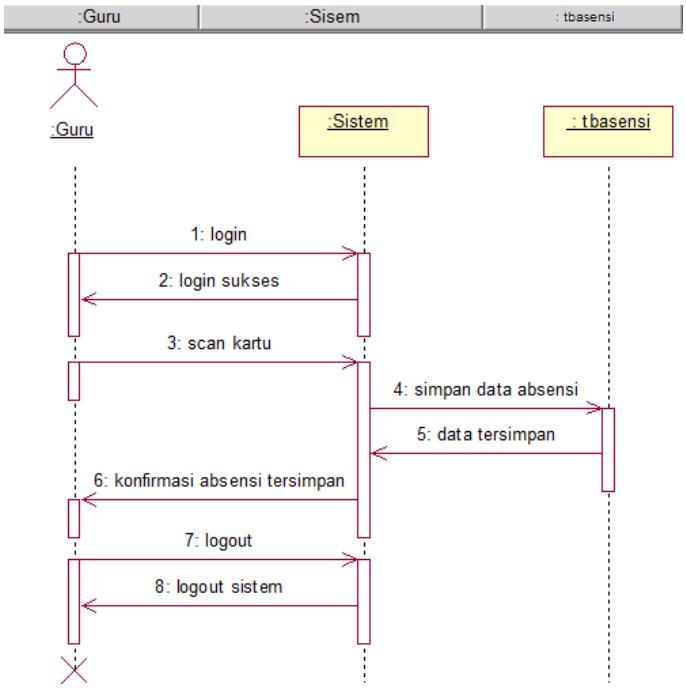


FIGURE 3. *Sequence Presensi*

Information :

1. Teacher login to the system
2. The system informs that the login has been successful on the teacher
3. The teacher scans the student attendance card to the system
4. The data is saved by the admin to the Presence table
5. Data stored on the system
6. The system confirms to the teacher that the Presence has been saved
7. Master logout from the system

RESULTS

In this section, we will describe the program that will be used in the Android-based information system and attendance reporting for SMK Muhammadiyah 7 Gondanglegi students. The appearance of the Presence information system application is as follows:

Student Detail Form

In this student detail form there are NIS, Name, Class and Department of the Student. There is also an option for absent entry or absent leave.

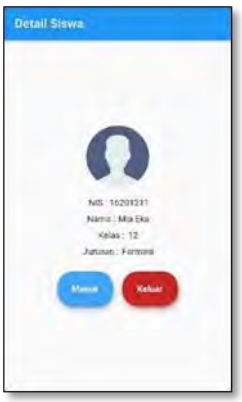


FIGURE 4. *Student Detail Form*

Presence History Form

In the student attendance history form, there are photos of students, student names, student NIS, class, major, attendance date, admission time and attendance time home.

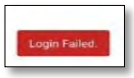
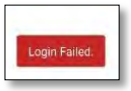
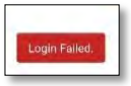
FIGURE 5. *History Presensi Form*

Functionality Test

In general, this test aims to test the function of each module made in the program. If all modules have been functioning properly as expected, then the

program is considered good. However, if there are several modules that do not work as expected, the percentage of program failures is calculated.

Table 1. *Functionality Test*

No	Test scenario	Test Case	Results that expected	Test result	Status
1.	Empty username and password then directly click the "Login" button		The system will deny access login and will showing message "login" failed”		Valid
2.	Empty the username and then click the button "Login"		The system will deny access login and will showing message “Login Failed”		Valid
3.	Clear password Then straight away Click button "Login"		The system will deny login access and will display the message “Login Failed”		Valid
4.	Fill in the username and password then directly click the "Login" button		The system will display the message "Login Success”		Valid
5.	Fill in the admin username and admin password then click the “Login” button		The system will process and will display the main page		Valid
6.	On the main page, click the scan QR code button in the middle		The system will display a page to scan the QR code		Valid
7.	On the main page, click the student data list button on the left		Then the system will display a list of student data		Valid
8.	On the main page, click the Presence history button on the right		Then the system will display the history of student attendance that has been done		Valid

In the functional test, the author tested the teachers of SMK Muhammadiyah 7 Gondanglegi. Where in the test obtained valid results.

DISCUSSION and CONCLUSIONS

From the conclusion of the system made, it can be concluded that this system can help SMK Muhammadiyah 7 Gondanglegi in the student attendance process and make it easier to record student data. As a support for the data collection process for student attendance, this system provides solutions to school problems in shaping student discipline by using technology.

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ASSESSMENT INSTRUMENT VALIDITY CREATIVITY OF ELEMENTARY SCHOOL STUDENTS

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Abstract. The purpose of this study was to determine the validity of the assessment instrument in the form of a self-evaluation questionnaire for elementary school students' creativity. This research was conducted in elementary schools in Kepil District, Wonosobo Regency. The subjects of this study were fifth grade elementary school students for a limited trial of 156 students and a broad trial of 287 students. Before being tested, the instrument has been tested for feasibility with content validity which was analyzed using V Aiken with a result of 0.948 which means the V Aiken value is more than 0.75 so it can be said that each item of the assessment instrument is valid. The research succeeded in developing a creativity assessment instrument as many as 31 items consisting of valence and factual data. The results of data analysis showed that the KMO and Barlet's test scores were 0.773. This figure is greater than 0.5 and the resulting significance is below 0.05. Based on the results of the MSA (Measure of Sampling) test analysis, it was found that all items met the criteria, namely > 0.5.
Keywords: Validity, Instrument, Creativity Assessment

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PRELIMINARY

Developing thinking skills through habituation in the learning process is a step that can be taken in order to create adaptive graduates. Thinking skills are at the core of the learning process so that students have competence in solving problems related to everyday life. Without thinking skills, of course, it will have an impact on students' failure in dealing with the complexity of the problems encountered in the challenges of the times. (Haryanti & Saputra, 2019).

One of the eighteen character values that need to be taught to children in the development of cultural education and national character created by the National Education Office according to Retno Listyarti is a creative attitude. Creative is thinking and doing something to produce new ways or results from something that is already owned. (Agustina, D.K., Setiawan, A., 2020:25).

An important component in the implementation of education is an assessment or assessment. Improving the quality of learning and the quality of the assessment system are two things that are interrelated in an effort to improve the quality of education. Where a good learning system produces good learning quality in this case it can be seen from the results of the assessment. With a good assessment system, educators will be motivated to

determine good teaching strategies by hoping that students will also be encouraged to learn better. For this reason, improving the assessment system is very necessary in improving the quality of education. (Mardapi, 2017:10)

Assessment is the process of collecting and processing information to measure student achievement (Juandi, 2019). Assessment or assessment requires data from accurate individual measurement activities, so the measuring instrument used must be good. Validity is evidence and theory support for the interpretation of test scores in accordance with the purpose of using the test. (Mardapi, 2017:32)

The goal to be achieved in this study is to determine the validity of the creativity assessment instrument for elementary school students.

METHOD

This research includes research development methods or Research Development. The research steps used in this study used ten research steps according to Mardapi. (Mardapi, 2017:131)

This development research is useful to determine the validity of the elementary school student creativity assessment instrument that is tested, qualified and feasible to use. The object of research used is an instrument for assessing student creativity. The research location is in elementary schools in the Kepil District, Wonosobo Regency and carried out from July to September 2021.

The data collection techniques used are: (1) Testing the feasibility of the student creativity assessment instrument that has been made by proving content validity with expert judgment by experts or practitioners. (2) Testing the creativity assessment instrument on fifth grade elementary school students in Kepil District, Wonosobo Regency and seeing the final score of the validity test. (3) Documenting research data.

Testing the validity of the content of the creativity assessment questionnaire instrument by compiling the items or items of the instrument based on predetermined indicators, and then consulting the instrument with experts or practitioners (Expert Judgment) and analyzed using the Aiken Index. The purpose of content validity is to examine: (a) whether the statement items are in accordance with the indicators, (b) the language used is communicative and uses correct grammar, (c) whether the statement items are unbiased and boring to answer (Azwar, 2012).

Kumaidi in (Retnawati, 2017: 18) states that content validity is determined using expert agreement. The agreement of experts in the field of study or often referred to as the measured domain determines the level of content validity (content related). This is because the measurement instrument, for example in the form of a test or questionnaire, is proven valid if the expert believes that the instrument measures mastery of the abilities defined in the domain or also the psychological construct being measured. To find out this agreement, validity indices can be used, including the index proposed by Aiken.

The validity analysis was carried out by the researcher after the readability test was carried out on 11 fifth grade elementary school students, a limited trial was carried out on 156 fifth grade elementary school students, and an extensive trial was conducted on 287 fifth grade elementary school students in Kepil District, Wonosobo Regency which aims to analyze the validity statement of criteria passed and whether or not the item statement.

This study uses factor analysis techniques. EFA analysis (Exploratory Factor Analysis), in SPSS statistics better known as CFA, theoretically can only be done for data with more than one variable. The construct validity of this research instrument used the Kaiser-Meyer Olkin (KMO) MSA measurement method. Furthermore, to find out which variables can be further processed and which ones are excluded, see the Anti-Image matrix table. In the Anti-image matrix table, specifically in the (Anti Image Correlation) section, a number marked with indicates the MSA amount of a variable. MSA also has the same rules as KMO, the MSA value of each variable is > 0.5.

RESULTS

The process of preparing this creativity assessment instrument goes through the stages of development research. The stages used refer to the Mardapi steps. The initial stage in the process of developing creativity assessment instruments is done by developing an assessment instrument through determining instrument specifications, namely by determining the clarity of objectives, compiling a grid based on concepts, coding indicators of valence and factual data both positive and negative and the number of items. Every student must instill creativity in learning both in doing assignments and completing assignments. Creativity is thinking about new things. To improve the quality of education at the elementary school level in terms of attitude or personality or character, especially student creativity, an instrument is needed to measure the value of student creativity in general which is assessed in addition to cognitive and psychomotor aspects as well as affective or attitude aspects. Because student success is not only determined by cognitive and skill aspects, but is also determined by other aspects, namely affective aspects or attitude aspects.

The preparation of this instrument is based on 4 indicators, namely fluency of thinking (fluency), flexibility / flexibility of thinking (flexibility), originality of thinking (originality), and elaboration (elaboration). After the instrument is prepared with predetermined guidelines, it then enters the validation stage by experts.

The analysis from the expert is divided into two parts, the first part includes construction, content and language. According to experts the instrument is feasible to use. There are some corrections from experts such as the use of each student's word on the valence item, it is better to use the student's word. So the researchers made improvements, namely the use of students' words on valence items.

The validation from the experts in the second part includes the relevance of the statement items. In general, the experts gave an assessment of the very relevant and relevant category. This shows that the instrument can be used

constructively for further analysis processes. The validity of the instrument content is carried out through expert judgment by instrument experts, namely 3 lecturers who can measure the suitability of indicators, use of grammar and creativity statements. There are suggestions from experts for the use of the word handphone to be improved with a more general word, namely the word technology, and there are some statements that are not suitable to be adjusted so that it is easy for students to understand. From the calculation results, it is found that the average value of V Aiken is 0.948 above the limit of the V Aiken coefficient, or all of them are above 0.75. So it can be concluded that it can be categorized as valid.

In the readability test of the questionnaire which was tested on class V students with a total of 11 students. At this stage the researcher gave a questionnaire for the creativity assessment instrument and asked for student responses to the readability of each statement item. The goal is that the contents of the questionnaire used can be understood by students, so it does not cause double interpretation. The results of the readability test were not revised.

Initial analysis with item validity test, to find out which items are significant and valid. Validity is stated empirically by the validity coefficient r 0.159 and significant 0.05 in this case the item has high discriminatory power. However, if the number of items that pass turns out to be insufficient, it can be considered to lower the criteria a little (Saifuddin Anwar, 2013: 8)

Based on the results of the item validity test, it is obtained that the items are significant and valid, both valence items and factual items, as shown in table 1 below.

Table 1. *Item validity*

BUTIR VALENSI				BUTIR FAKTUAL			
No	No Butir Valid	No	No Butir Valid	No	No Butir Valid	No	No Butir Valid
1	1	9	10	17	18	25	26
2	2	10	11	18	19	26	27
3	3	11	12	19	20	27	28
4	4	12	13	20	21	28	29
5	5	13	14	21	22	29	30
6	6	14	15	22	23	30	31
7	8	15	16	23	24	31	32
8	9	16	17	24	25	32	

The next stage is the construct validity test using a sample of 156 fifth grade elementary school students in Kepil District. The results of data analysis showed that the KMO and Barlet's test scores were 0.723. This figure is greater than 0.5 and the resulting significance is below 0.05. The results obtained that all items meet the criteria, namely > 0.5

Table 2. *KMO Value*

Hasil Analisis		Nilai
Kaiser-Meyer-Olkin Measure (KMO) of Sampling Adequacy.		*.723*
Barlet's test of Sphericity	*Approx. Chi-Square*	1535.972
	Df	496
	Signifikan	0,000

The next step is the interpretation of the correlation matrix test results. Matrix test results can be seen in Anti-Image Covariance and Anti-Image Correlation. Based on the interpretation of the correlation matrix test results, it can be decided that item number 7 (valence item) has an MSA value of <0.5 so item number 7 (valence item) is excluded from further analysis. So that further analysis there are 31 items including 15 valence items and 16 factual items.

Each repetition of the analysis process by removing items that have an MSA below 0.5 will increase the overall value (Singgih Santoso, 2015: 76). After 1 item is removed and re-analysis is carried out, the output results of the KMO and Barlet's test values are as follows:

Table 3. KMO and Barlet's Test Values are limited to 31 items

Hasil Analisis		Nilai
Kaiser-Meyer-Olkin Measure (KMO) of Sampling Adequacy.		*.739*
Barlet's test of Sphericity	*Approx. Chi-Square*	1488.452
	Df	465
	Signifikan	0,000

Looking at table 3 above, there is an increase in the value of KMO and Barlet's Test from 0.723 to 0.739 > 0.5 and all MSA values have reached > 0.5. So that the analysis process can be continued by conducting extensive trials on 287 class V students and further analysis is carried out to obtain the output results of the KMO and Barlet's test scores as follows:

Table 4. Value of KMO and Barlet's Test Area Test on 31 items

Hasil Analisis		Nilai
Kaiser-Meyer-Olkin Measure (KMO) of Sampling Adequacy.		*.773*
Barlet's test of Sphericity	*Approx. Chi-Square*	2933,699
	Df	465
	Signifikan	0,000

Based on tables 3 and 4 above, there was an increase in the value of KMO and Barlet's Test during the limited trial, the value was 0.739 and there was an increase during the extensive trial with a value of 0.773 > 0.5 and all MSA values had reached > 0.5. So that the analysis process can be continued.

All MSA values with respect to the Anti-image Correlation diagonal line are marked with the letter (a) > 0.5. Communalieties data shows how much (%) the formed factor can explain the item variance. The item is said to have a strong relationship with the formed factor if it has a value > 0.5. Eigenvalues can be seen from the Total Variance Explained table. The Initial Eigenvalues show the formed factors while the Extraction Sum of Squared Loading shows the number of variants obtained. In the development of this assessment instrument formed 10 factors and 10 variants. A total of 10 factors are able to explain the variable of 63.695%. Because the Communalitive number is > 60%, the factor formation is sufficient. The loading factor in the Rotated Component Matrix table shows that all items have a larger correlation factor load indicating that the variables are more suitable to be included in the respective component matrix. The appropriate value used is > 0.5. Factor 1 has 5 instruments, factors 2, 3 and 4 have 4 instruments, factor 5 has 1 instrument, factors 6, 7 and 9 have 3 instruments, factors 8 and 10 have 2 instruments. The results of the analysis after showing that rotation is carried out, all items have a factor load where 31 items of assessment instruments are spread over 10 factors.

Then the last step is assembling the instrument back into a final assessment instrument and implemented to assess the creativity of elementary school students, especially elementary school students in the Kepil District, Wonosobo Regency.

DISCUSSION AND CONCLUSION

The research succeeded in developing 31 items of student creativity assessment instrument consisting of valence and factual data. Expert validation results show the average value of V Aiken is 0.948. This value has shown the value of V Aiken above 0.75. So it can be said that each item of the instrument is declared valid. The results of data analysis showed that the KMO and Barlet's test numbers were 0.773. This figure is greater than 0.5 and the resulting significance is below 0.05. Based on the results of the MSA (Measure of Sampling) test analysis, it was found that all items met the criteria, namely > 0.5. Thus it can be concluded that this creativity assessment instrument is declared valid or feasible and can be used to assess the creativity of elementary school students, especially elementary school students in the Kepil District, Wonosobo Regency.

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PENGARUH MODEL PEMBELAJARAN KOOPERATİF TİPE *TEAM GAME TOURNAMENT* (TGT) BERBANTUAN MEDİA MONOPOLİ HİDROSFER TERHDAP HASİL BELAJAR SİSWA KELAS V SEKOLAH DASAR

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Abstrak. Hasil belajar siswa pada mata pelajaran IPA di salah satu SDN Pekanbaru masih tergolong cukup rendah. Berdasarkan pada nilai UTS IPA yang telah dilaksanakan pada bulan Oktober 2021, banyak siswa yang belum mencapai Kriteria Ketuntasan Minimal (KKM). Hal ini disebabkan tenaga pengajar masih tergolong jarang untuk menggunakan media pembelajaran berbasis permainan pada mata pelajaran IPA. Salah satu cara untuk meningkatkan hasil belajar siswa tersebut yaitu dengan menggunakan model pembelajaran kooperatif tipe *Team Game Tournament* (TGT) berbantuan media monopoli Hidrosfer. Hasil penelitian ini diharapkan bahwa model pembelajaran kooperatif tipe *Team Game Tournament* (TGT) dengan media monopoli Hidrosfer memiliki pengaruh terhadap meningkatnya hasil belajar siswa.

Kata kunci: Team game tournament (TGT), monopoli, hasil belajar siswa

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PENDAHULUAN

Pendidikan merupakan serangkaian proses bimbingan yang diberikan kepasa siswa untuk mengembangkan pengetahuan, sikap maupun keterampilannya. Pendidikan dapat didefinisikan sebagai “Suatu usaha yang dilakukan secara sadar untuk mengembangkan kepribadian dan kemampuan di dalam maupun di luar sekolah yang berlangsung seumur hidup dan mengarah kepada tujuan yang hendak dicapai” (Mulianingsih, 2014).

Salah satu materi pelajaran yang ada dalam konsep tema di Sekolah Dasar (SD) yaitu materi pelajaran IPA (Ilmu Pengetahuan Alam). Menurut Ismah & Ernawati (2018), “Pembelajaran IPA berperan penting dalam peningkatan mutu pendidikan, terkhususnya untuk menghasilkan siswa yang mampu berfikir kritis, kreatif, logis serta memiliki inisiatif dalam menanggapi isu di masyarakat yang diakibatkan oleh dampak perkembangan IPA”. Sesuai dengan namanya, IPA merupakan suatu ilmu pengetahuan yang mempelajari tentang alam, yaitu segala sesuatu yang berada di alam, mulai dari hewan, tumbuhan, manusia, air, bumi, dan lain sebagainya. Adapun hal yang mempengaruhi hasil belajar siswa dapat dilihat dari penggunaan model dan media pembelajaran di dalam proses belajar mengajar.

Menurut Arifin, Utomo & Anisa (2018), hasil belajar merupakan “Hasil nilai yang diperoleh siswa setelah mengikuti pembelajaran sebagai tolak ukur berhasilnya proses pembelajaran, kemampuan-kemampuan dari hasil belajar tersebut mencakup aspek kognitif, afektif dan psikomotorik”.

Berdasarkan pada pengertian tersebut, maka hasil belajar dapat diartikan sebagai perubahan-perubahan yang terjadi setelah dilaksanakannya pembelajaran, baik itu perubahan dari aspek Kognitif (pengetahuan), Afektif (sikap) maupun Psikomotorik (keterampilan).

Menurut Widayanti and Slameto (2016), hasil belajar peserta didik mempunyai peranan penting bagi peserta didik untuk mengetahui sejauh mana tingkat keberhasilan dalam mengikuti pelajaran yang disajikan guru dan untuk mengetahui peserta didik dalam mencapai KKM yang telah ditentukan sebelumnya serta penentuan penggunaan strategi pembelajaran, model pembelajaran, media pembelajaran yang sudah sesuai atau belum.

Berdasarkan hasil wawancara yang dilakukan di salah satu SDN Pekanbaru, diketahui bahwa sekolah tersebut jarang mengadakan game pada pembelajaran IPA sehingga perlu adanya kelompok belajar dan melakukan turnamen. Selain itu, model pembelajaran yang diterapkan oleh tenaga pengajar lebih cenderung menggunakan model pembelajaran langsung, dan jarang menggunakan model pembelajaran dalam bentuk diskusi kelompok. Perolehan hasil belajar siswa pada mata pelajaran IPA juga tergolong cukup rendah. Hal ini dapat diketahui dari nilai UTS yang dilaksanakan pada bulan Oktober 2021 pada mata pelajaran IPA, yang mana banyak siswa yang belum mencapai Kriteria Ketuntasan Minimal (KKM).

Model pembelajaran kooperatif tipe *Team Game Tournament* (TGT) dengan berbantuan media monopoli Hidrosfer dapat membantu guru dalam melaksanakan pembelajaran. Pada dasarnya, model pembelajaran kooperatif tipe *Team Game Tournament* dengan media permainan monopoli sebagai model pembelajaran merupakan sebuah variasi permainan dalam diskusi kelompok (Arifin, Utomo & Anisa, 2018). Pada model *Team Game Tournament* siswa akan berkompetisi dalam permainan sebagai wakil dari kelompoknya. Setiap kelompok akan bersaing dalam mengumpulkan nilai untuk menjadi juara pada permainan tersebut (Rosyana, Mulyani & Saputro, 2014).

Berdasarkan latar belakang tersebut, maka tujuan dilakukannya penelitian ini adalah untuk mengetahui pengaruh model pembelajaran kooperatif tipe *Team Game Tournament* (TGT) berbantuan media monopoli hidrosfer terhadap hasil belajar siswa kelas V Sekolah Dasar Tahun Ajaran 2021/2022.

METODE

Penelitian ini menggunakan metode penelitian eksperimen dengan desain kuasi eksperimen. Kelompok eksperimen ini terbagi menjadi dua, yaitu kelompok eksperimen (menggunakan model pembelajaran *team game tournament* berbantuan media permaian monopoli hidrosfer terhadap hasil belajar) dan kelompok kontrol (tanpa menggunakan model pembelajaran *team game tournament* berbantuan media permaian monopoli hidrosfer terhadap hasil belajar). Pada penelitian ini menggunakan desain penelitian *Nonequivalent Control* dalam bentuk *pre-test* dan *post-test group* pada dua kelompok penelitian yaitu kelompok eksperimen dan kontrol.

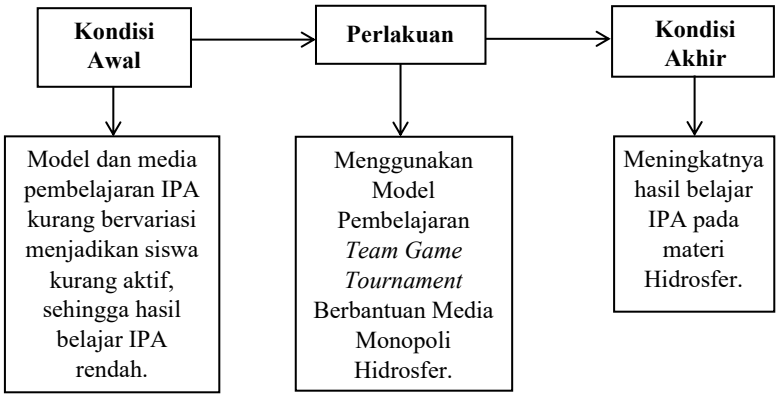
Populasi dan Sampel

Populasi pada penelitian ini adalah siswa kelas V di salahsatu Sekolah Dasar Negeri Pekanbaru pada Tahun Ajaran 2021/2022. Sampel dalam

penelitian ini terdiri dari 2 kelompok, yaitu kelompok eksperimen (kelas VA) dan kelompok kontrol (kelas VB).

Kerangka Berfikir

Adapun gagasan kerangka berpikir pada penelitian ini disajikan melalui bagan berikut:



Metode Pengumpulan Data

Metode pengumpulan data yang digunakan dalam penelitian ini meliputi : Tes (Pre-test dan Posttest untuk kelas eksperimen dan kelas kontrol) dan Non Test (Dokumentasi).

Instrumen Penelitian

Instrumen yang digunakan dalam penelitian ini adalah instrumen Tes dan Non Tes. Adapun instrument tes berupa pre-test dan post-test dalam bentuk pilihan ganda yang digunakan untuk mengukur pengetahuan siswa terhadap materi Hidrosfer. Adapun soal-soal yang diberikan menyesuaikan dengan fokus penelitian yaitu pada ranah kognitif: (C1) Pengetahuan, (C2) Pemahaman, (C3) Penerapan, dan (C4) Analisis. Sedangkan non tes berupa dokumentasi.

Hipotesis Penelitian

Hipotesis merupakan hasil sementara yang dilihat dari rumusan masalah pada penelitian, kemudian peneliti mengemukakan landasan teori serta kerangka berfikir (Sugiyono, 2019). Hipotesis dalam penelitian ini terdiri dari:

H_o = Tidak ada Pengaruh Model Pembelajaran *Team Game Tournament* Berbantuan Media Monopoli Hidrosfer Terhadap Hasil Belajar Siswa Kelas V Sekolah Dasar.

H_a = Terdapat Pengaruh Model Pembelajaran *Team Game Tournament* Berbantuan Media Monopoli Hidrosfer Terhadap Hasil Belajar Siswa Kelas V Sekolah Dasar.

PEMBAHASAN

Sebelum diberikan perlakuan, kelompok eksperimen dan kontrol akan diberikan tes awal berupa (*pre-test*) secara bersamaan untuk mengetahui hasil belajar dari masing-masing kelompok tersebut. Selanjutnya, kelompok eksperimen akan diberikan perlakuan (X), yaitu model pembelajaran *team game tournament* berbantuan media permaianan monopoli. Sedangkan kelompok kontrol tidak diberikan perlakuan tetapi diberikan pembelajaran seperti biasa dengan metode ceramah dan tanya jawab. Setelah diberikan perlakuan, kelompok kontrol dan eksperimen akan diberikan tes akhir (*post-test*) untuk mengetahui pengaruh penggunaan model pembelajaran team game tournament berbantuan media monopoli terhadap hasil belajar siswa pada aspek kognitifnya.

Table 1. *Tabel Desain Penelitian Nonequivalent Control*

Kelas	Pretest	Perlakuan	Posttest
Eksperimen	O_1	X	O_2
Kontrol	O_3	-	O_4

Keterangan:
X : Perlakuan menggunakan model pembelajaran *team game tournament* berbantuan media permaian monopoli hidrosfer.
O_1 : *Pretest* sebelum diberi perlakuan pada kelompok eksperimen
O_2 : *Posttest* setelah diberi perlakuan pada kelompok eksperimen
O_3 : *Pretest* pada kelompok sebelum diberi perlakuan kontrol
O_4 : *Posttest* pada kelompok setelah diberi perlakuan kontrol

Berdasarkan penelitian yang dilakukan oleh Aden (2020) dengan judul penelitian pengaruh model pembelajaran *Teams Games Tournament* berbantuan media palu kombipoli terhadap hasil belajar matematika, hasilnya menunjukkan bahwa terdapat pengaruh pada penggunaan model pembelajaran *Teams Games Tournament* berbantuan media papan ludo kombinasi monopoli terhadap siswa kelas IV SD Negeri Trasan 1 Kabupaten Magelang dengan materi bangun datar. Kemudian penelitian yang dilakukan oleh Widayanti & Slameto (2016) dengan judul penelitian pengaruh penerapan metode *Teams Games Tournament* berbantuan permaınan dadu terhadap hasıl belajar IPA, menunjukkan hasil bahwa terdapat pengaruh terhadap peningkatan hasil belajar siswa. Dengan diterapkannya model TGT dengan berbantuan permainan dadu, diduga kuat dapat meningkatkan ketertarikan siswa dalam mengikuti pembelajaran, dan siswa merasa senang sehingga hasil belajar siswa yang diperoleh meningkat.

Dengan diterapkannya model *Teams Games Tournament* berbantuan monopoli pada materi hidrosfer dalam proses pembelajaran IPA pada penelitian saat ini, diharapkan dapat membuat siswa merasa senang dan tertarik untuk mengikuti proses pembelajaran, sehingga antusias siswa menjadi lebih aktif dan dapat berpengaruh baik pada meningkatnya hasil belajar siswa kelas V di salahsatu Sekolah Dasar Pekanbaru Tahun Ajaran 2021/2022.

DISKUSI DAN KESIMPULAN

Kesimpulan dalam penelitian ini yaitu diharapkan adanya pengaruh model pembelajaran kooperatif tipe *team game tournament* (TGT) dengan berbantuan media monopoli hidrosfer terhadap hasil belajar siswa kelas V Sekolah Dasar Tahun Ajaran 2021/2022.

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NURSING STUDENT SATISFACTION SURVEY STUDY ON THE USE OF VIRTUAL LEARNING (VILEP) APPLICATIONS IN ONLINE LEARNING DURING THE COVID 19 PANDEMIC

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Abstract. Student satisfaction with the lecture process needs to be evaluated and becomes an important factor for higher education as a provider of educational services for students. Student satisfaction in using the VILEP application is important to examine its use by nursing students. The general purpose of the study was to describe student satisfaction with the use of the VILEP application in online learning during the Covid 19 pandemic disaster. The type of research used was a descriptive research method in the form of a survey. The subjects of this research are students. Data collection techniques using indirect communication techniques using google form. The data collection tool is in the form of a questionnaire sheet. The data analysis technique used a univariate approach and the data were presented using a frequency description table. The results showed that the distribution of respondents was based on respondents' satisfaction with online learning, the majority of respondents said they were satisfied (82.5%). These results illustrate that learning using the VILEP application can facilitate course learning outcomes in the midst of the Covid 19 pandemic disaster

Keywords: Satisfaction, Learning, Online, Vilep Application

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INTRODUCTION

Since the government announced the first case of Coronavirus Disease 2019 (Covid-19) in March 2020, Indonesia was then faced with a pandemic. Almost all sectors of life are affected, including the education sector. Covid-19 is spreading so fast and has spread to almost all countries, including Indonesia, so the World Health Organization (WHO) made this outbreak a global pandemic on March 11, 2020. In the education sector, the government through the Ministry of Education and Culture (Kemdikbud) has implemented a learning from home (BDR) policy, especially for education units located in the yellow, orange and red zones. This refers to the Joint Decree of the Minister of Education and Culture, Minister of Religion, Minister of Health and Minister of Home Affairs regarding Guidelines for the Implementation of Learning in the 2020/2021 Academic Year and the 2020/2021 Academic Year during the Covid-19 period. For educational units located in the green zone, they can carry out face-to-face learning while still paying attention to health protocols. (Asmuni, 2020)

The development of the internet and communication information technology is utilized by higher education to develop online learning (Adijaya, 2018). Modern learning systems based on information technology are a solution to support efforts to suppress the potential spread of the virus in

schools and universities. In addition, the online learning system also provides a very broad quality of reach for the community because it can be accessed in various places and times. One of the ways that universities can use this technology is the online lecture system. With the online lecture system, lecturers and students can continue to carry out their teaching and learning obligations anywhere and anytime. (Ghufron Ulinuha, 2021).

The Kupang Ministry of Health Poltekkes in this case the Ende Nursing Study Program as a part of the education sector also applies online learning. Online learning or also called e-learning is a learning concept that is not limited to place and time, so it can be accessed by lecturers and students anytime and anywhere (Darmawan, 2015). Ende's Nursing Study Program has an online learning system called VILEP (Virtual E-Learning Poltekkes) which is an online learning platform. Previously, the VILEP system was only used for assignments, sharing materials, and online lectures at least 4-5 times per semester.

Student satisfaction with the lecture process needs to be evaluated and becomes an important factor for higher education as a provider of educational services for students. (Andilala, 2019). Furthermore, previous researchers have researched about e-learning in student perceptions and showed results that the application of e-learning needs to be analyzed for its impact on students whether students are satisfied or not satisfied in carrying out online lecture activities (Saifudin, 2018). The results of the student satisfaction research can be used as evaluation material to improve the quality of online learning and are expected to be evaluation material for the VILEP application system manager, users (lecturers and students), and the Kupang Ministry of Health Poltekkes regarding the implementation of online learning during the pandemic. The general purpose of the study was to describe student satisfaction with the use of the VILEP application in online learning during the Covid 19 pandemic disaster.

METHODS

The type of research used is a type of descriptive research method in the form of a survey. The subjects of this study were nursing students at level I, II and III of the DIII Nursing Study Program at the Health Polytechnic of the Ministry of Health, Kupang, East Nusa Tenggara Province. The number of students who participated in this study were 57 students at level I, 23 at level II and 17 at level III, and the object of this research was student satisfaction with the use of virtual electronic learning (VILEP) applications for Health Potekkes, Ministry of Health, Kupang for the academic year 2020/ 2021. Data collection techniques using indirect communication techniques using google form. The data collection tool is in the form of a questionnaire sheet. The data analysis technique uses a univariate approach which aims to explain or describe the characteristics of the variables studied. While the presentation of the data using a frequency description table for each of the characteristics studied.

RESULTS

The distribution of respondents who participated were identified in the study including gender, class of students and various other characteristics of satisfaction.

Table 1 Distribution of respondents by gender, class and class.

CATERGORY	N	%
Gender		
Woman	89	91,8
Man	8	8,2
Total	97	100,0
Class and Level		
Level I A	26	26,8
Level I B	31	32,0
Level II A	8	8,2
Level II B	15	15,5
Level III A	6	6,2
Level III B	11	11,3
Total	97	100,0

Source: primary data2021

Based on table 1 above, it shows that the gender of the majority of respondents is female, namely 89 respondents (91.8%). Meanwhile, the class and class of respondents were the majority.

Table 2. Distribution of respondents based on the characteristics of respondents' satisfaction

CATEGORY	Very Dissatisfied	%	Not satisfied	%	Satisfied	%	Very satisfied	%
Availability of clear course information (Semester Learning Plan)	2	2,1	2	2,1	83	85,6	10	10,3
The structure of the material, subject and sub-topic is clear.	2	2,1	20	20,6	63	64,9	12	12,4
The material is presented in a communicative language and is equipped with documents to enrich the lecture material.	3	3,1	4	4,1	81	83,5	9	9,3
Relevant links are available to support content.	2	2,1	16	16,5	74	74,3	5	5,2
Variety of learning objects (text, images, audio, video, animation) that are selected are interesting and appropriate according to learning needs.	3	3,1	12	12,4	72	74,2	10	10,3
The visual display of the learning object is clear.	3	3,1	9	9,3	75	77,3	10	10,3

Learning can facilitate a variety of learning strategies (lectures, discussions, mentoring, independent study).	2	2,1	13	13,4	71	73,2	11	11,3
Clear and objective learning evaluation methods.	2	2,1	14	14,4	73	75,3	8	8,2
Online learning is carried out according to the (Semester Learning Plan)	2	2,1	6	6,2	77	79,4	12	12,4
The online learning room (o-class) is easily accessible and can be used without any significant problems.	7	7,2	29	29,9	53	54,6	8	8,2
Convenience of students when doing online learning.	6	6,2	32	33,0	52	53,6	7	7,2
Availability of student internet resources during online learning.	9	9,3	35	36,1	47	48,5	6	6,2
Student perceptions of the menus available for online learning	1	1,0	18	18,6	72	74,2	6	6,2
Student perceptions about the effectiveness of online learning	7	7,2	28	28,9	56	57,7	6	6,2
Student perceptions of quota assistance from educational institutions.	8	8,2	12	12,4	63	64,9	14	14,4
Distribution of students based on respondents' satisfaction with online learning.	0	0	4	4,1	80	82,5	13	13,4

Source: primary data 2021

Based on table 2 above, it shows that the majority of respondents stated that they were satisfied based on the availability of clear course information (Semester Learning Plan) on the virtual learning menu (VILEP) (83.6%). Based on the structure of the material, the main topics and sub-topics are clear the majority of respondents are satisfied (64.9%). Based on the material presented in a communicative language and equipped with documents to enrich the lecture material, the majority of respondents stated they were satisfied (83.5%). Based on the available relevant links to support the content, the majority of respondents stated that they were satisfied (76.3%). Based on the variety of learning objects (text, images, audio, video, animation) which were selected interesting and appropriate to the learning needs, the majority of respondents stated that they were satisfied (74.2%). Based on the visual appearance of the learning object, the majority of respondents stated they were satisfied (77.3%). Based on learning can facilitate a variety of learning strategies (lectures, discussions, mentoring, independent study) the majority of respondents said they were satisfied (73.2%). Based on the clear and objective learning evaluation method, the majority of respondents stated they

were satisfied (75.3%). Based on online learning carried out according to the RPS, the majority of respondents stated they were satisfied (79.4%). Based on the online learning room (o-class) it is easily accessible and can be used without any problems, which means that the majority of respondents are satisfied (54.6%). Based on your comfort when doing online learning, the majority of respondents said they were satisfied (53.6%). Based on the availability of your internet resources during the implementation of online learning, the majority of respondents stated that they were satisfied (48.5%). Based on respondents' perceptions of the menus available online learning, the majority of respondents said they were satisfied (74.2%). Based on respondents' perceptions of the effectiveness of online learning (Virtual learning), the majority of respondents stated they were satisfied (57.7%). Based on respondents' perceptions of quota assistance from educational institutions, the majority of respondents said they were satisfied (64.9%). Meanwhile, based on the distribution of respondents based on respondents' satisfaction with online learning, the majority of respondents said they were satisfied (82.5%).

DISCUSSION and CONCLUSIONS

Based on the results of the study, the majority of respondents stated that they were satisfied based on the availability of clear course information (Semester Learning Plan) on the virtual learning menu (VILEP) (83.6%). The use of effective learning plans and in accordance with online learning will assist in the delivery of material online, so that it is possible for students to understand what is explained by the nursing lecturer. Based on the structure of the material, the main topics and sub-topics are clear the majority of respondents are satisfied (64.9%). The clarity of the subject and sub-topics becomes a road map (roap map) of the teaching and learning process that makes it easier for lecturers and students to realize the learning outcomes of the courses that have been determined.

Based on the material presented in a communicative language and equipped with documents to enrich the lecture material, the majority of respondents stated they were satisfied (83.5%). The menus in the VILEP application can facilitate student interaction with lecturers in discussing and discussing lecture material. In addition, the menus are equipped with document material for lectures prepared by the lecturer before the lecture takes place and these documents can be easily downloaded by students to be used as learning handouts (handouts). Based on the available relevant links to support the content, the majority of respondents stated that they were satisfied (76.3%). Relevant links will make it easier for students to access lecture content that can be sourced from various forms of credible references. Based on the variety of learning objects (text, images, audio, video, animation) which were selected interesting and appropriate to the learning needs, the majority of respondents stated that they were satisfied (74.2%). The selection of multimedia-based learning media is one solution to make students able to understand the subject matter well, especially in learning basic physics courses. Nursing courses require interesting and fun learning media, because nursing science discusses various kinds of basic human needs, especially

those related to health and illness. Lecturers who support courses must be able to design media as attractive as possible, so that the material can be well received by students. Interesting and fun learning media will be able to eliminate boredom in learning.

Based on the visual appearance of the learning object, the majority of respondents stated they were satisfied (77.3%). Student online lectures require their own variations to eliminate boredom (Aan Widiyono, 2020). The use of interesting learning media in online lectures, lecturer creativity is needed in learning to avoid boredom (Hikmat et al, 2020). Learning is considered to be able to facilitate a variety of learning strategies (lectures, discussions, mentoring, independent study) the majority of respondents said they were satisfied (73.2%). There are various menus in the VILEP application that support learning strategies, namely quizzes, assignments, videos, references and other interesting menus. Based on the clear and objective learning evaluation method, the majority of respondents stated they were satisfied (75.3%). Based on online learning carried out according to the RPS, the majority of respondents stated they were satisfied (79.4%). The implementation of online learning has been arranged according to the schedule set in the Semester Learning Plan for each Course, so that there are no course schedules that overlap one course with other course schedules.

Based on the online learning room (o-class) it is easily accessible and can be used without any problems, which means that the majority of respondents are satisfied (54.6%). The fluctuating communication network (Internet) is one of the reasons why it is not easy for students to access online learning applications, this is directly proportional to the convenience of students in participating in learning using the VILEP application. Based on the convenience of respondents when doing online learning, the majority of respondents said they were satisfied (53.6%). Based on the availability of internet resources, the majority of respondents stated that they were satisfied (48.5%). The existence of a quota subsidy from educational institutions supports the availability of student internet resources. This is in accordance with the study of respondents' perceptions of quota assistance from educational institutions, the majority of respondents said they were satisfied (64.9%). Based on respondents' perceptions of the menus available online learning, the majority of respondents said they were satisfied (74.2%). Based on respondents' perceptions of the effectiveness of online learning (Virtual learning), the majority of respondents stated they were satisfied (57.7%).

Meanwhile, based on the distribution of respondents based on respondents' satisfaction with online learning, the majority of respondents said they were satisfied (82.5%). According to Firdaus (2020) the solution to implementing learning during a pandemic is to apply online learning, so that it can reduce the number of virus spreads. Online learning gives students the freedom to get information widely from various sources. Online learning can improve skills in using information technology tools. According to the journal Salsabila, et al (2020), in the implementation of online learning, of course, it cannot be separated from the role of technology. Technology can facilitate all needs in the teaching and learning process. Digital technology in educational institutions as a means of supporting learning, both as a means of accessing information on learning resources or as a means of supporting learning

activities and related to assignments. Satisfaction is a person's feeling of pleasure or disappointment that arises after comparing his perception/impression of the performance or results of a product and his expectations (Asmuji: 2012).

Several studies have been conducted related to online learning. Research on student perceptions of online learning is limited to aspects of teaching and learning, lecturers' abilities, facilities and infrastructure. The results showed that online learning had a positive impact on practical courses. According to Prasetya (2020) the level of student satisfaction is one of the benchmarks for the quality of e-learning. The level of student satisfaction using e-learning can show students enjoying the online learning process. Quality learning will have a high level of satisfaction for its users. Research on student perceptions in online learning, students feel that online learning is less supportive in the teaching and learning process so that lecturers can facilitate them by creating groups on social media to interact and improve the atmosphere of the learning environment among class members (Adijaya.2018). According to Saman (2021) that basically students' perception of online implementation is good, it's just that it has several obstacles including the internet network being difficult to access in other words not all students can access the internet because of geographical conditions, there are some students who have difficulty understanding the material presented because the learning process is disrupted because the network is intermittent (dashed) and not all students have practical tools such as laptops and cellphones to carry out learning. Based on the results of the study, it can be concluded that online learning satisfaction in the Ende Nursing DIII Study Program at the Health Polytechnic of the Ministry of Health of Kupang obtained a percentage of student satisfaction level of 82.5%. These results illustrate that learning using the VILEP application can facilitate course learning outcomes in the midst of the Covid 19 pandemic disaster.

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THE EFFECTIVENESS OF ANDROID BASED PMC (*PROJECT MATCHMAKING A CARD*) LEARNING MODEL ON MATHEMATICAL CONNECTION ABILITY OF STUDENTS

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Abstract. This study aims to determine how the implementation of the learning model *Project Matchmaking a Card* Android-basedon students' mathematical connection abilities. Quantitative experimental method as the method used in this research, the research design used is *quasi-* in the form of non- *experimentalequivalent control group design*, and the sampling technique used is *purposive sampling technique*.learning is *Project Matchmaking a Card* Android-based applied to the experimental class. The improvement of students' mathematical connection skills with the application of thelearning model is *Project Matchmaking a Card* Android-based known from theresults *gain test,* with the experimental class value after learning being 73% greater than the control class with a value of 37%. From the results of the analysis of *pre-test* and *post-test questions in* the experimental class, there is an increase in mathematical connection ability after the application of thelearning model *Project Matchmaking a Card* Android-based in learning. This shows that the application of the learning model *Project Matchmaking a Card* Android-based can be used as an alternative in improving students' mathematical connection skills.

Keywords: Mathematical Connection, Project Matchmaking a Card, Android Based

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INTRODUCTION

Mathematics has an important position in realizing human expertise, especially in the fields of science and technology (Sumiati et al., 2019; Wardah, Utomo and Putri, 2021), where Namkung et al (2019) and Sukestiyarno, Mashitoh and Wardono (2021) states that mathematics has an effect on everyday life with the quality of technology being increasingly dynamic. This is in line with the statement of Asfar, Asfar & Sartina (2018) that the changing times in the global era do not come out of the function of mathematics, because being skilled in technology requires better mathematical abilities as well. However, the mathematical skills of students in Indonesia are still very low, so that Indonesian students cannot compete with students from other countries. Asfar, Asmawaty & Nursyam, 2019; Ibrahim et al., 2021; Asfar & Asfar, 2020).

The results of *the International Student Assessment Program* (PISA) for Indonesia announced by *The Organization for Economic Cooperation and Development* (OECD) in 2018 show that math skills are still low, where Indonesia is ranked 73rd with an average PISA score of 379 equivalent with

Argentina. Meanwhile, the average score of mathematics achievement for OECD countries is 489 (OECD, 2019).

One of the important factors that must be mastered by students in improving their mathematical abilities is the ability to connect mathematically (Prihandhika, 2017; Sumiati et al., 2019). Mathematical connection ability is the ability to connect between mathematical topics and between mathematics topics and other fields or daily

life **(**Adni, Nurfauziah and Rohaeti, 2018; Anjelina, Usman and Ramli, 2021)**.** In addition, Yolanda and Wahyuni (2020) state that mathematical connections are higher-order thinking skills, which link between concepts in mathematics both internally, namely related to mathematics itself and externally, namely mathematics with other fields in everyday life. Connection is very important for students to master, because the ability to connect will make it easier for students to solve problems related to everyday life (Diana, Latipah and Afriansyah, 2018; Zulkarnain and Farhan, 2020).

However, students' mathematical connection abilities in general are still low, where students still have difficulty connecting mathematical concepts (Setyoningrum, Sukestiyarno and Nugroho, 2020; Hasbi, Lukito, Sulaiman and Muzaini, 2019). The low mathematical connection ability is caused by the learning process in the classroom which still emphasizes the activities of the teacher, students are not very active, and the questions given tend to not vary, so that students have difficulty answering questions related to problems of daily life (Prihandhika, 2017; Aliyah, 2017). Abidin and Fathani, 2019). This is also seen in class XI students of SMAN 11 Bone, where the results of interviews with mathematics teachers in class XI obtained information that students have difficulty connecting mathematical concepts and have difficulty answering questions related to everyday life problems. Therefore, innovations in mathematics learning are needed that can improve students' mathematical abilities, interests and activities (Paneo, 2019).

The use of inappropriate or inappropriate learning models greatly affects student learning activities (Paneo, 2019). In addition, Setiawan, Kusmawanti and Pratama (2020) revealed that if a teacher is not appropriate or does not master the model to be applied, the learning process becomes saturated or boring for students. Mathematics learning should be taught in an interesting way and using concrete examples (Anggreni et al., 2020). Therefore, the researcher chose two learning models to achieve the learning objectives, namely thelearning model *Project Matchmaking a Card* (PMC).

The PMC (*Project Matchmaking a Card*) learning model is the result of a modified *Project Based Learning* learning model with the *Make a Match* learning model which means that the PMC (*Project Matchmaking a Card*) learning model is a learning model that is able to overcome the problem of students' mathematical connection abilities where students are required to able to connect between mathematical concepts, mathematical concepts with other fields of science and everyday life. This learning model emphasizes the ability of students' mathematical connections,*problem solving*that relates mathematics to other fields of science and everyday life.

The PMC (learning model is*Project Matchmaking a Card*)applied in online learning by transforming it from offline to online learning. This is because due to the Covid-19 pandemic situation, the student learning process in the

classroom must change the method with learning from home or learning from home (Kusumaningrum and Wijayanto, 2020), where online learning is the best choice in implementing learning activities and at the same time technology is developing. so rapidly (Gozali, 2020). Rohana and Ningsih (2019) stated that the use of information technology is something that can support the development of students' mathematical skills.

The implementation of the research used several applications to support the implementation of learning, such as *zoom meeting, random generator, meistertask* and *quizizz*. The use of interactive media for learning as an inseparable component and as an integration of the use of learning models (Sulastri, et al., 2019; Sumiati et al., 2020). Therefore, this study was to determine the application of the PMC (learning model*Project Matchmaking a Card*Android-based) to students' mathematical connection abilities.

METHODS

Quantitative research as the type of research applied in this study was a *quasi-experimental design with* a *quasi experimental design* tipe *nonequivalent control group design.* The population in this study were all students of class XI MIPA SMA Negeri 11 Bone in the academic year 2020/2021 spread over 4 classes with 59 male students and 59 female students. 64 people. Where, the selection of the sample was based on the considerations of the mathematics teacher class XI Mathematics, based on these considerations class XI MIPA 3 as the experimental class consisted of 30 students, while XI MIPA 1 as the control class consisted of 30 students. Thelearning model is *Project Matchmaking a Card* Android-based(PMC)implemented to improve mathematical connection skills in the experimental class. The test instrument used in this study was a written test (*pre-test* and *post-test)* consisting of 5 essay questions to measure students' mathematical connection skills. The *nonequivalent control group design* can be seen in Figure 1.

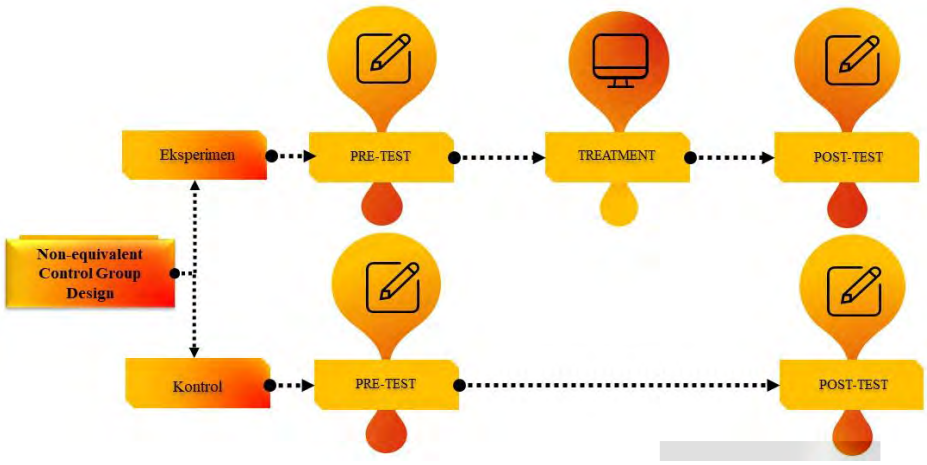

Figure1. *Nonequivalent Control Group Design*

The stages in thelearning model *Project Matchmaking a Card* Android-based are as follows:

a. *Team*

Guru provides and manages relevant learning resources that can be support the smooth learning process, both through face-to-face activities,

as well as online and provide issues/problems related to the project, as well as share students into several small groups heterogeneously using theapplication *Rnadom Generators*;

b. *Project*

Teacher guides group members to identify problems that exist in the project, divides the tasks of preparing project designs, guides group members to arrange work schedules, assesses presentations and the work of each group (project) using theapplication *MeistarTask*;

c. *Matching The*

teacher prepares and guides students in matching questions and answers with using theapplication *Quizizz*, as well as providing confirmation of the correctness and suitability of the questions and answers from each group.

The following in Table 1 are indicators of mathematical connection abilities, namely (Diana, 2020):

Tabel 1. *Indikator Kemampuan Koneksi Matematis*

Indikator	Deskripsi
1. Connections between mathematics	• Midentify mathematical ideas related to the problem • Applying mathematical relationships between ideas related to the problem • Explain the relationship between mathematical ideas related to the problem in the form of a conclusion.
2. Connections to Disciplines other	• Modeling problems in other sciences into mathematical form • Applying mathematical ideas relationship that has diteroleh in other scientific fields • Explain the relationship of mathematical ideas that have been obtained in other disciplines such conclusions.
3. Connections to *real life concepts*	• Modeling a problem in the everyday life into mathematical form • Applying mathematical ideas relationships in problems related to everyday life • Explain the relationship of mathematical ideas in problems related to everyday life in the form of a conclusion.

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RESULTS

Based on the results of theqtestq*ofq**normality*q*Shapiro-Wilk*, qobtainedqresultsq*p-value*qforq*pre-test* control class and experimental class is less of 0.05 which means the control and experimental class data. Predominantly the control and experimental class data for *pre-test* and *post-test were* not normally distributed. Furthermore, for testing the hypothesis that will be used refers to nonparametric statistical testing, where *Levene Statistics* for *pre-test is* 0.549 (homogeneous) and *post-test is* 0.006 (non-homogeneous). From the results of the calculation of the significant price of thedata *pre-test* greater than 0.05 ($p > 0.05$), it can be concluded that the data in this study has a homogeneous variance, while in the *post-test test the* data is not homogeneous. This indicates that there is a difference in the ability of the experimental control class. In addition, there are two hypothesis tests proposed by researchers, namely H_0 and Ha_a. Based on the results of the prerequisite test showing that the data is not normally distributed, then the next data analysis is for hypothesis testing with nonparametric statistics. The results of theobtained *Mann-Whitney* at the *test werepre-test* $p > 0.05$, which means that there is no difference in the mathematical connection ability of students in the control class with the experiment. In testing the mathematical connection ability after the PMC (learning model was applied*Project Matchmaking a Card*)to the experimental class and thelearning model *Porject Based Learning* in the control class, the results of the analysis were $p < 0.05$ at a significant level of 5%, which means there is a difference in the average score. students' mathematical connection abilities in both classes.

It can be concluded that there is a significant increase in students' mathematical connection ability scores in the experimental class after the application of the PMC (*Project Matchmaking a Card*) learning model compared to the control class with the implementation of thelearning model *Project Based Learning.*

The increase in the average score of the *pre-test* and *post-test was* calculated using the formula for the *gain* averageof normality. *Gain* is the difference between thescores *post-test* and *pre-test, the gain* indicates an increase in students' mathematical connection skills after learning is carried out to avoid research bias conclusions. The results of *N-gain are* shown in the following table.

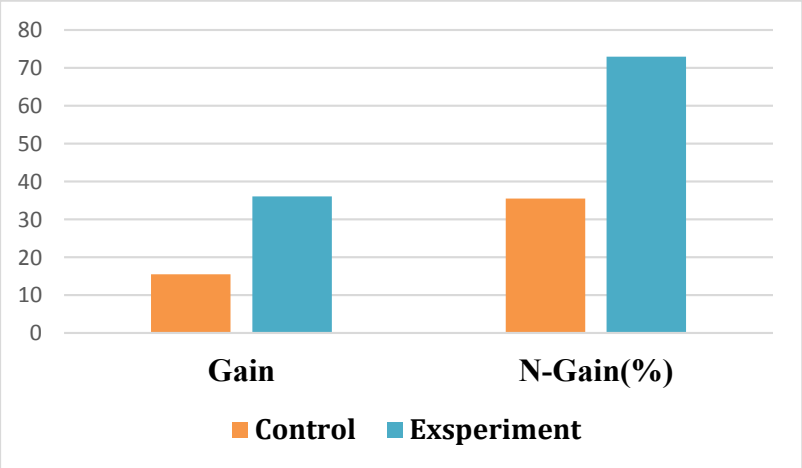

Figure 2. *Comparison of N-gain Control Class and Experiment Class*

Based on the normality test of the *gain* , it can be concluded that the increase that occurred after the implementation of the PMC (learning model*Project Matchmaking a Card*)was in the high category of 0.73 (73%), while the control class with the application of thelearning model *Project Based Learning* was in the medium category of 0.37 (37%). Based on thedata analysis test *N-gain* above, it was concluded that both the experimental and control classes experienced an increase, but the increase in the experimental class was higher than the control class.

In addition, the results of the mathematical connection ability test obtained a score for each indicator which is presented in Figure 3 below.

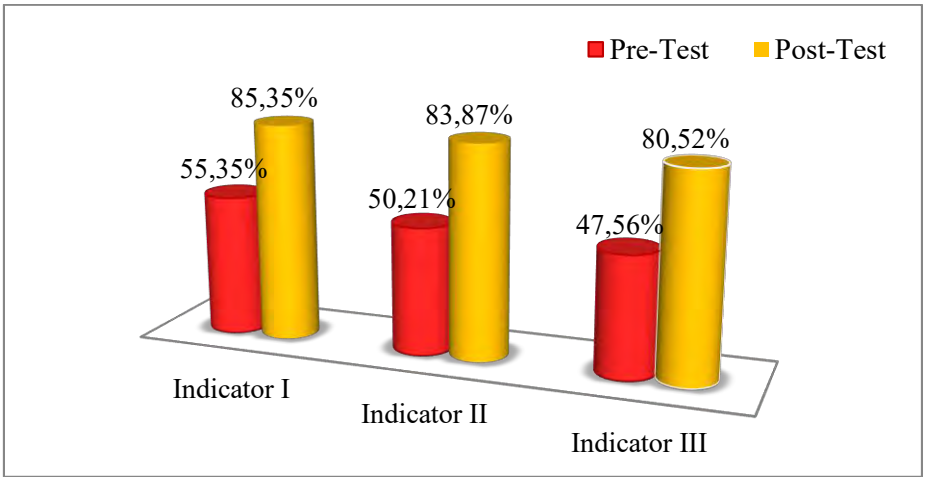

Figure 3. *Percentage of Students' Mathematical Connection Ability Indicators*

In Figure 3 it can be seen that the percentage of mathematical connection ability in indicator I, namely linking between mathematical ideas in the *pre-test is* 55.35% and *post-test is* 85.35%. Indicator II relates mathematical ideas to other disciplines in the *pre-test* of 50.21%, and *post-test* of 83.87%. While indicator III is linking mathematical ideas with everyday life in the *pre-test* of 47.56% and *post-test* of 80.52%.

Learning with the PMC (learning model*Project Matchmaking a Card*)emphasizes students' skills in making connections between mathematics, connections in other fields of knowledge, and connections in *real life concepts.* Learning begins with the formation of heterogeneous groups, then project work is carried out in groups. All teams are actively involved in the learning process in working on the questions. Each group representative will present the results of the project work carried out, then an evaluation is carried out in the form of a quiz to find out how student knowledge is in the learning process. cs

Figure 5. *Project Matchmaking a card Learning Process*

Learning model *Project Matchmaking a Car* can trigger student activity and improve students' mathematical connection skills, where mathematical connection abilities consist of 3 indicators namely, the connection between mathematics, the connection of other disciplines, and the connection of *real life concepts.* This is in line with the research of Haji, Abdullah, Maizora & Yumiati (2017: 55) which states that one of the efforts to improve students' mathematical connections requires learning related to everyday life. In addition, Hadin & Suparman (2019:20) state that mathematical connection skills can be better helped by using a problem-based learning approach which is a learning approach that tries to apply what happens in the real world as a context for students to practice mathematical connections how to get problem solving skills. problem.

Kandari & Zanthy (2020:234) stated that mathematical connection skills play an important role in solving problems. This is in line with Kenedi et al., (2019:155) which states that the process of solving mathematical problems is a student activity that can build students' mathematical connections, this happens because in solving mathematical problems students must have the ability to find linkages between concepts or theorems used. to solve a problem. Meanwhile, in learning mathematics, Android can be used as a medium to support the learning process (Apsari & Rizki, 2018). Android-based learning media can attract students' interest in the learning process, where learning is more fun (Zakiy, Syazali & Farida, 2018).

CONCLUSIONS

The application of the learning model *Project Matchmaking a Card* Android-based directly to learning builds students' attention and interest, as well as trains problem-solving and connecting skills. In addition, the use of several applications such as the application *zoom meeting, random generator, meistertask* and *quizizz* realize the creation of work between groups, so that it will be fun with the efficiency of operating time. The results of data analysis showed that the application of the learning model was *Project Matchmaking a Card* Android-basedeffective in improving the mathematical connection skills of XI MIPA class XI MIPA SMAN 11 Bone. Thus, the application of thelearning

model is *PMC (Project Matchmaking a Card)* Android-basedrecommended to be applied in mathematics learning, especially in improving students' mathematical connection skills.

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IMPORTANCE OF CHARACTER BUİLDİNG İN THE DİGİTAL AGE THROUGH MONTHLY MARKET DAY ACTİVİTİES

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Abstract: The purpose of this article is to explain the importance of character building in the digital age through the activities of Monthly Market Day. This writing frame is based on the school's role in implementing the educational nature of digital learning. There are various challenges and opportunities in character formation in the digital age. Studies show that the digital age offers a positive opportunity to implement character formation. Our challenge is to teach students to use ethics in the digital age. Challenges facing character building in the digital age include balance, security, cyberbullying, sexting, copyright, and plagiarism. Education policy makers need to play an active role in the continued development of the digital era through monthly market activities in order to effectively implement the digital era through monthly market activities. A monthly market day at school to instill independent personality, discipline and responsibility in researchers. The monthly market day is held twice every two months, and from the second market day, there are changes that will help the student's personality. The character formation questionnaire was distributed three times, pre-market and post-market, with pre-market questionnaire results of 43.75% and post-market spread results of 72.75%.

Keywords: Character Building, Digital Learning, Market Day, Importance

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INTRODUCTION

Education in the digital era is an education that must integrate Information and Communication Technology into all subjects. With the development of education in the digital era, it allows students to gain knowledge in abundance and quickly and easily. Responding to the challenges of education in this digital era, teachers and students in the 21st century must be able to communicate and adapt to the times, in this case is the development of technology, with the development of the era, it is directly proportional to the development of problems that require solving with high-level thinking. The problems faced are globalization, economic growth, international competition, environmental, cultural, and political problems, these complex problems make it very important to develop skills and knowledge to succeed in the 21st century. National education has the function of developing skills and forming valuable national character and civilization in the context of the formation of national life, with the aim of developing the potential of students to become Almighty God's people, become

a noble character, healthy, knowledgeable, competent, creative, independent, democratic and responsible citizen. (National Education System Law, Article 3, 2003).

Character building is a student's personality to become a better person. Both in school and in the community, and these students must continue to be taught good morals. During the pandemic, the current implementation of learning is digital learning (online), so students will not miss a class. Personality formation in school digital learning has a vision and a mission. One is to create good students in science and technology, create good students in skills, creativity and independence, and train good students in faith and devotion. This study aims to explain personality formation in learning schools. The results of this study show that character formation in online learning at school has been carried out by teachers, from religious values, honesty, tolerance, discipline, diligence and creativity. The implementation of online learning in schools begins with the quality of learning, consistency with learning goals, feedback, online learning skills, and learning facilities. This survey will help teachers add guidance on how to build student characters. The usefulness of research for students is to provide them with knowledge and insight into the importance of developing their own personality as a learner.

Character building aims so that students as the nation's successors have good morals and morals, to create a just, safe and prosperous nation's life. Character education is the creation of a school environment that helps students in the development of ethics, responsibility through models. Good character education must be carried out and educated as early as possible so that the community is able to instill good traits and behavior from an early age so that they can reduce criminal numbers, especially in a pandemic era, educators only rely on digital technology to support the learning process and teach all students in elementary schools.

According to Marilin and Ruly, digital learning is a learning activity that uses digital and internet devices and tools to create a more engaging, creative and independent learning environment. Online learning can take the form of teaching materials and information, assigning assignments, and two-way interactions between teachers and students during the learning process. With online learning, there are several options for online devices that can support online learning itself, and each online learning device has different systems and ways of working, including Google software / applications. Classroom, Google Meeting, Zoom, WhatsApp, Youtube, Edmodo and more. (Marilin & Ruly, 2020). By following developments technology, it is hoped that educators can always innovate in every activity learning. When learning activities carried out by following developments technology, the learning cannot be separated from the progress of the times and of course will there is novelty in the load the learning. Learning that effective can be seen from how learning can answer the needs of students, as well as the demands of the progress of the times (Purnasari & Sadewo, 2020).

As for what happened on the field especially in the educational environment, negative influence is more dominant take the role of students' attitudes. As less independent attitude, lack of discipline, and less responsible. Less independent can be seen from relying too much on the

internet in the completion of tasks without looking and filter again what it gets through Internet. So as to make students too dependent on the internet, and not independent in completing tasks. Character lack of discipline can be seen from the way the participants learn to obey all orders and the rules imposed by the school and educators in the school environment. and character lack of responsibility can be seen from the way students who are less able to take responsibility for the task assigned to them when teaching and learning process in the classroom, for example small when given group assignments some students just sit and rely on other friends.

Market Day is an education aimed at providing understanding and relatively complete awareness of life, building an emotional structure and a more stable spirit, and sometimes building a more enlightened everyday attitude. Market Day is an entrepreneurial learning activity that teaches participating students how to sell their products to friends, educators, or other outside parties. This activity usually takes the form of a market organized around the school, and market day activities usually include all the elements of the school. Market Day activities usually take place at specific times for specific purposes rather than daily. Hopefully, after monthly market day activities, students will have their personality (independent, disciplined, responsible) in their daily lives, especially when used in school education and learning activities. Get used to applying. In addition, applying a good personality to a student can have a positive impact on a student's academic performance. Studies show that personality formation not only makes a positive difference in student attitudes, but can also have a positive impact on student performance at school.

METHODOLOGY

The research method used in this study is a mix with sequential exploratory strategies. The Strategy Sequential Exploratory by Creswell (2014) includes the collection and analysis of qualitative data in the first stage, followed by the collection and quantitative data analysis in the second stage based on the results of the first stage. Weights/priorities are likely to be in the stage first, and when a researcher links qualitative data analysis and quantitative data collection, a mixed process between the two methods occurs.

The survey was conducted at SDIT BUNAYYA Blangkejeren, one of the existing primary schools in the Gayo Lues Ruth Regency. The survey focuses on character formation, the digital age, and the number of market days each month. This study focuses on three personalities: independent personality, discipline, and responsibility. The sample for this study consists of 60 randomly drawn upper class students. In this study, researchers seek to apply character building (independence, discipline, responsibility) in the digital age through monthly market day activities. The formula used in calculating a questionnaire about character education using the index % formula.

$$\text{Index \%} = \frac{\text{Total Score}}{Y} \times 100$$

From the above formula, the value of Y is obtained from the sum of the highest score multiplied by the number of respondents. Here, there are four points (1, 2, 3, 4) in the character formation questionnaire, and the number of respondents in this survey is 100. That is, the result of multiplying the maximum number of points by 100 is 400, and the value of Y is the index% formula of 400.

RESULTS

Looking at some of the issues identified by some character students in an elementary school environment, researchers are trying to reapply character formation in the digital age through activities on monthly market days. Monthly Market Day activities train students to be active and teach participants to stop relying on others. Through monthly scouting activities, train students to take responsibility for their actions, become more independent about what they should follow and prepare, before starting the buying and selling process at the monthly market day event. Allows you to maintain discipline. From the explanation, it can be concluded that character formation in the creation of value is to give the character as the basis of the creation of the qualities that can lead a daily life. So that later it can be the one who brought the principle of truth to the explanation. In contrast, student independence, discipline, and expected responsibilities may later be reflected in some schools and extracurricular activities.

Researchers collect data on independent personality, discipline, and responsibility development through qualitative data analysis and quantitative through interviews and calculation of personality formation questionnaires. Following the interview in the early stages of this study, the calculation of the Likert scale in the second stage. The result of an interview conducted at the beginning of the first observation before the investigation was conducted. First interview with the principal and SDIT BUNAYYA educator.

The questions asked at the beginning of the interview deal with the three characters that are the focus of the study: character independence, discipline, and responsibility. Researchers also ask about the level of achievement related to the nature of KDP (Education Enhancement) activities, which was previously a government program. The results of the first interview showed that the lack of preparation in conducting activities aimed at enhancing education is characteristic due to the lack of indicators that are a measure of expected character performance. Educators are less focused on educating participants to strengthen their personality building, as there are no indicators to achieve the expected personality. Therefore, an indicator is needed to achieve the expected characteristics.

After the first interview, the researchers distributed a questionnaire at the beginning of the observation. The survey contains about three character configurations that are the focus of the survey. The purpose of creating a personality education questionnaire is to make it easier for researchers to evaluate how much personality formation they can expect, apart from interviewing the results with school principals and educators. Educational

questionnaires will be distributed three times. The first survey conducted monthly before Market Day to find out how independent personality, discipline and responsibility participants have. The second survey was submitted after the first monthly market day was held in June. The purpose is to find out how the first monthly market day affects the character of independent, disciplined and responsible participants. The third survey was used to measure how much the activity of the monthly market day affected the student's independent personality, discipline, and responsibilities, so after the last monthly market day was performed. It was issued. Digital era.

After calculating using the Index % formula, the researcher first needs to know the distance range (interval) of the calculation in order to interpret the calculation result using the Index% formula. The distance range calculated by the interval formula is 25, which is the total number of respondents divided by the number of survey results. The criteria for interpreting the score according to the interval are as follows:

Table 1. Interpretation Criteria score based on interval

Percentage (%)	Interval	Category
0% - 24,99%	25	Never
25% - 49,99%	25	Ever
50% - 74,99%	25	Often
75% - 100%	25	Always

From the results of the character formation questionnaire, which was conducted for the first time before the monthly market day activities, 43.75% of the results calculated using the index % formula were obtained. When classified as a score interpretation criterion based on the interval, the value is entered in the "historical" criterion. Based on the results obtained from the distribution of the first questionnaire, the students carried out some activities with a clear personality, discipline and responsibility in their school activities.

The first monthly market day time was implemented in June. Students are very excited to do these activities. The implementation of the Code of Conduct Market Day was well received by students and teachers. After the market day was over, the researchers handed out a second character-building questionnaire for analysis and evaluation. From the distribution of the character construction questionnaire. The second result is 64.50%, which includes the "frequently" criterion. After analyzing the implementation of the first market day, the second market day with some innovations was held in July. A character formation questionnaire shared after the second day of the market. Get 72.75% of the character formation results from the third survey analysis. Results flow "frequently" into the criteria. That is, independence, discipline, and independence are often implemented by students after monthly Market Day activities.

From the distribution of the character formation questionnaire to the monthly market day, students will experience a positive change in character. Monthly activity market days have a positive impact on a student's personality, including changes in independence. This independent personality is an essential personality for students, especially in the classroom teaching and learning process (Tannir & AlHroub, 2013). In addition to independent characters, there are some characters that are well

used by students, characters of discipline and responsibility. After conducting monthly market day activities, complete the assignment without tricking friends, get out in front of the class without teacher's instructions, use the internet to take advantage of the complete assignment, but also do it by the students Here are some common activities: Many other activities that students usually do, such as dressing up and solidifying, erasing the whiteboard after studying, throwing trash on the pitch, reflect independence, discipline, and responsibility.

CONCLUSIONS

During the current COVID 19 pandemic, personality formation during the learning process should not be ignored. Good education not only gives and receives teaching materials from teachers to students, but also develops and forms a positive attitude behind them. In other words, a good and polite personality is the student's true personality. The active participation of teachers, parents and communities is needed to shape the character of the generation of the country, and we are working together to form the character of the next generation of countries. Based on the results of a survey conducted at SDIT Bunayya, we came to the conclusion that the student's personality has changed significantly. A monthly market day at school to instill independent personality, discipline and responsibility in researchers. The monthly market day is held twice every two months, and from the second market day, there are changes that will help the student's personality. The character formation questionnaire was distributed three times, pre-market and post-market, with pre-market questionnaire results of 43.75% and post-market spread results of 72.75%. Related results for both are obtained from qualitative and quantitative data. Qualitative data from the results of interviews conducted before and after the monthly market day regarding the application of character formation.

Different results were obtained from the monthly market day interviews before and after the interview. Although the quantitative data obtained from the calculation is index%. The two data show the important consequences of positive changes in independence, discipline and student responsibility. Next, we conclude that monthly market day activities help students carry out personality development in their daily school activities. Character building is an education that is mistakenly given to students without going through the learning process in the classroom. Researchers conduct monthly market days as a bridge to apply independent personality, discipline and responsibilities. Researchers make suggestions to schools and other researchers. At school, researchers make suggestions to maintain the characters that are embedded in the participants' training. Like any other researcher doing research in the field of research, we will give a new touch together and maintain the personality given to the student.

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DEVELOPMENT OF PİCTURE STORY-BASED MATHEMATİCS TEACHİNG MATERİALS IN CLASS III STUDENTS OF SD NEGERİ 6 LASALEPA

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ABSTRACT: *This research aims to devolep and produce illustrated story-based mathematich teaching material in class III Elementary School 6 Lasalepa the school year 2020/2021. This research is a development research (R & D) with the ADDIE development model which consists of five stages, namely Analyze, Design, Development, Implementation, and Evaluation . In this development research, researchers limit the development stage to the Development stage. This research was conducted at SD Negeri 6 Lasalepa. The teaching materials developed were tested on a limited basis to third grade students. Data collection was carried out by giving validation sheets to material expert lecturers and media expert lecturers as well as third grade teacher responses to assess the feasibility of the developed product. The data obtained were then analyzed descriptively. The results of this study have produced illustrated story-based mathematics teaching materials that are suitable for use in learning mathematics, in terms of the feasibility assessment by media expert lecturers obtaining a percentage of 80% with valid criteria, material expert lecturers in the material validation section obtaining a percentage of 90% and language validation obtained a percentage of 100% with valid criteria. And received a positive response from the third grade teacher who obtained a percentage of 95% with very good criteria.*

Keywords: Picture Story Teaching Materials

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PRELIMINARY

Education is a long-term investment, so education broadly should be seen from the process, not the product. Education is basically a conscious effort and planned to create a learning atmosphere and learning process, so that students actively developing his potential, Maslikhatun (2019). However, if students have a low enthusiasm for learning, so to realize a good learning process, effective will not materialize.

Education is also the biggest pillar in the development mission in every school in a country and everything related to all aspects that exist in human beings, ranging from physical, mental and moral. Therefore, to develop the potential within oneself, namely with quality education or education that is able to produce students who excel in their respective fields in facing global challenges and increasingly fierce free competition, Putri (2016).

In the educational process, mathematics is one of the most important subjects included in the elementary school curriculum that must be given to students, this is This is because mathematics is the science of logic regarding

form, arrangement, quantity, and related concepts, Fitriani & Permana (2019). Thing This is in line with James's opinion that mathematics is a science of logic which deals with shapes, arrangements, numbers, and concepts that have many links one another. In addition, mathematics is a science obtained from reasoning activities which causes mathematical objects to be abstract, Rahmah (2018).

This is in line with Piaget's opinion that elementary school-age children are still in the stage concrete operations, namely liking real objects and having a very high fantasy power high, based on these assumptions to make it more interesting and foster children's motivation For something, we need media that can channel creative imagination in children namely teaching materials based on picture stories, because teaching materials like this can attract students' interest in learning because there are interesting pictures and are often found in everyday life. Then also the basic math concepts will be easier understood by students when assisted with media teaching materials in the form of illustrated stories to to clarify the abstract concept, Faizah (2019).

According to Herawati (2015) teaching materials are materials that are systematically arranged which used to assist teachers in carrying out teaching and learning activities so that create an environment or atmosphere that allows students to learn. Meanwhile, according to National Center for Competency Based Training in Zuriah (2016) Teaching materials are everything the form of materials used to assist teachers in carrying out learning activities To teach, one of the teaching materials that can be used is comics. Mathematics teaching materials are one of the learning components used by students teacher as learning material for students which is arranged systematically and includes the overall competence of learning mathematics (development of thinking patterns and processing logic) that will be mastered so as to assist the teacher in carrying out activities teaching and learning in the classroom, so as to achieve success in learning mathematics, Takwa (2017)

Illustrated stories are pictorial illustrations that are given text and made with one of the comic life applications in the form of digital comics that can be designed and developed by users as well as a series of stories and image combinations can be set by yourself. Story illustrated can be applied to convey messages in various sciences, because of its attractive appearance, the format in picture stories is often given to a solemn explanation of its entertainment-only nature. Mathematics teaching materials picture-based stories basically help to encourage students and can increasing student interest in learning, Yaumi (2018).

Based on initial observations, the cases found in SD Negeri 6 Lasalepa in particular in class III students is the learning process has not taken place as expected desired, this is caused by students only sticking to the existing teaching materials in the BSE package book (electronic school book) as well as the teaching materials at school are still too general and has not attracted student interest during the teaching and learning process, the appearance and design of the existing images do not vary. While teaching materials are very important to attract students' attention to learning. This is in accordance with the opinion of Gymnastics in Fitry, Eddy, & Muhammad (2017) which

states that the form of interesting teaching materials, accompanied by pictures and illustrations will make students happy to learn it.

Based on the problems above, the researcher seeks to develop a material teaching math based on picture stories for arithmetic operations. This makes it easy teachers and students in the teaching and learning process. Picture stories are one solution that can be used as a learning resource that facilitates teachers in the learning process at school class. The contents and concepts of teaching materials that are prepared are expected to be able to help students in understanding mathematical material, especially arithmetic operations in depth and fun and helps students relate the material they learn to life daily. The researcher took the title "Development of Story-Based Mathematics Teaching Materials" Pictorial for Class III Students of SD Negeri 6 Lasalepa".

METHOD

This research uses research and development methods or research & development. Sugiyono (2019) stated that this research method was used to produce a particular product, and test the effectiveness of that product. In line with things the. Emzir in Rayanto (2020) states that the research and development method is a term used to describe activities related to with new discoveries and use This research uses research and development methods or research & development. that newly discovered knowledge to meeting this demand and engineering involves science, technology and mathematics. In this development, a product will be produced in the form of story-based mathematics teaching materials pictures in mathematics.

This development design is adapted to the ADDIE model, namely Analyze (analysis), Design (design), Development (development), Implementation (implementation), and Evaluation (evaluation). The reason the researcher chooses the ADDIE development model is based on Aldoobie's opinion ADDIE development model is one of the many models that used in the field of instructional design that helps teachers and learning designers to create an effective and efficient learning design by applying the process ADDIE model on any learning product Rafiq (2019). However, in this study the author limits the research only to development, because limited time and research funds. The development procedure carried out with using the ADDIE model in this study are as follows

1. Analysis phase (Analysis) a stage of gathering information that can be used as a materials to make products. In this case, the resulting product is teaching materials Picture Story-Based Mathematics. This information collection is in the form of analysis curriculum. Curriculum analysis aims to identify products that match target.
2. The Design Phase includes the criteria for collecting data, and designing teaching materials based on picture stories using comic life applications and microsoft word.
3. The Development Stage, which is the stage of realizing what has been made in the design stage to become a product. The final result of this stage is a product which will be tested.

The data collection techniques used in this research and development are questionnaire (questionnaire). The questionnaire (questionnaire) is a data collection technique carried out by giving a set of questions or statements to respondents to answered by Sugiyono (2019). Questionnaires can be used to measure the quality assessment of a company product to be developed. The assessment is carried out by media expert validators (lecturers), material expert validator (lecturer), and practitioner response (teacher).

RESULTS

The main result of this research is to produce math-based teaching materials picture stories for grade III elementary school students. Wade et al (2016) Development process The product is adapted from the ADDIE research model developed by Aldobiee which consists of: into five stages, namely Analyze (analysis), Design (design), Development (development), Implementation (implementation), and Evaluation (evaluation).

1. Stage of Analysis (Analyze)

a) Needs Analysis

Needs analysis is carried out by collecting important information related to with mathematics teaching materials used by third grade teachers at SD Negeri 6 Lasalepa. The teaching materials observed in this study were teaching materials provided by school. Based on the results of observations of story-based mathematics teaching materials In the picture, it was found that the component of teaching materials contained learning materials accompanied by pictures about mathematics that students rarely encounter in everyday life. day. In addition, the display of teaching materials is still in the form of black and white sheets of paper. Meanwhile, the display of teaching materials is very important in motivating students to learn math. Based on the results of the analysis, it is necessary to develop materials for teach illustrated story-based mathematics for grade III SD Negeri 6 Lasalepa who can assist teachers and students in carrying out the learning process.

b) Curriculum Analysis

The curriculum used at SD Negeri 6 Lasalepa is the 2013 curriculum In this study, researchers identified Core Competencies (KI) and Basic Competencies (KD) for know on which basic competencies teaching materials will be developed. Based on the results of the curriculum analysis, researchers determine the development of teaching materials Picture story-based mathematics will be developed in KD 3.1 and 3.2. This matter because the KD contains material counting operations. Besides, this material important because its application is widely used in everyday life.

2. **Stage of Design (Design)**

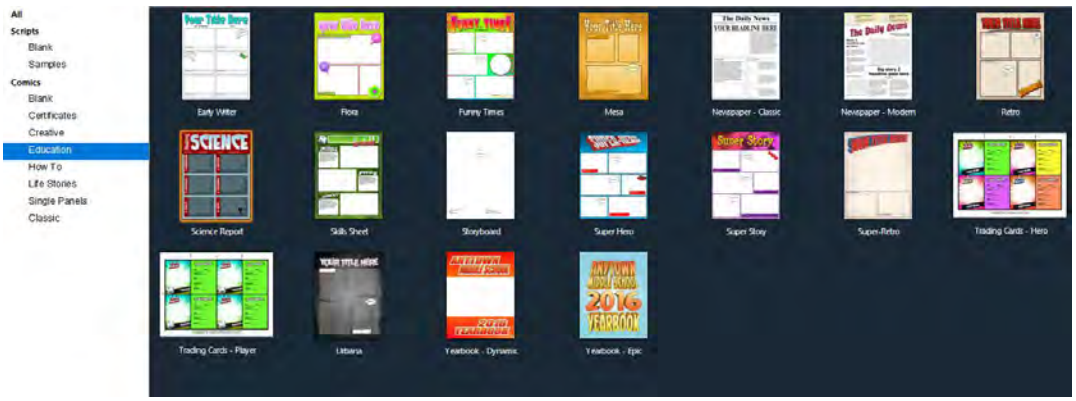
a) Data collection

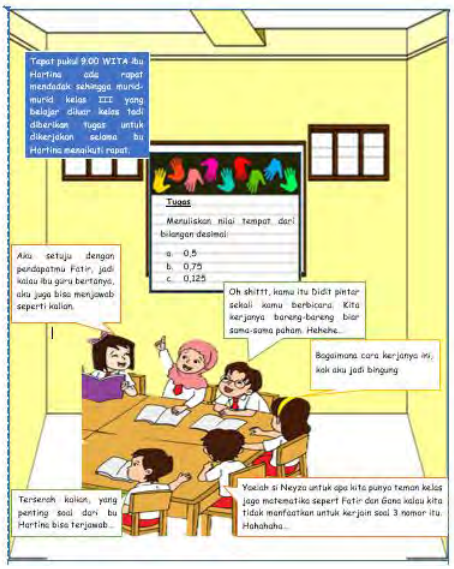
Data collection is carried out to collect various related information with illustrated story-based math teaching materials for arithmetic operations which will be developed. The data used are taken from various sources considered relevant and in accordance with the material selected

in the development of teaching materials in the form of books, articles, journals, and the results of previous research. The source to be reference for researchers in compiling materials and making contexts in teaching materials is a book provided by the school. This is important, so that the material presented in teaching materials according to the level of thinking ability of third grade elementary school students State 6 Lasaleppa.

b) Preparation of Teaching Material Design

Design preparation is carried out to determine the structure of teaching materials that can be used assist students and teachers in recognizing the elements contained in the teaching materials. The teaching materials developed in this research consist of 6 activities learning. Learning activity 1 entitled Numbers Long in the Form Thousands, Hundreds, Tens and Units, Learning activity 2 entitled Place Value, Learning activity 3 entitled Operation Addition in Thousands, Learning activity 4 entitled Operation Reduction in Thousands, Learning Activity 5 entitled Operation Counting Multiplication and Learning Activity 6 entitled Operation Counting Division. This material designed with three main parts, namely the beginning, the content and the closing using the Comic Life application.





Design of mathematics teaching materials using Comic Life and Microsoft word

c) Assessment Instrument

The preparation of the assessment instrument aims to evaluate products that are has been made, namely in the form of mathematics teaching materials based on illustrated stories on the material counting operations. The instruments used include a validation sheet by media and material experts, as well as teacher response questionnaires. Appraisal instrument that made for media and material expert validators using a rubric scoring technique consisting of 10 and 15 indicators.

1) **Media Construct Validation**

Table 1. Media Expert Validation Results

No	Aspects observed	Percentage (%)	criteria
1.	Design of teaching materials	40	Valid
2.	The effectiveness of teaching materials	40	Valid
Average		80%	

Table 1 shows that story-based mathematics teaching materials illustrated is worth testing with 80% validation results, which means teaching materials illustrated story-based mathematics has good characteristics so that it can tested by doing a revision first according to the advice of the validator Dr. Rimba Hamid, M.Si

2) **Construct Validation of material**

Table 2. Material Expert Validation Results

No	Aspects observed	Percentage (%)	criteria
1.	Eligibility of contents	50	Valid
2.	Eligibility of serving	40	Valid
Average		90%	

Table 3. Material Validation Results (Language)

No	Aspects observed	Percentage (%)	criteria
1.	Language compatibility	50	Valid
2.	The punctuation used is	50	Valid
Average		100%	

Tables 2 and 3 show that story-based mathematics teaching materials illustrated in terms of content according to material expert Dr. Nana Sumarna, S.Pd., M.Kes. worthy tested with valid criteria and has very good characteristics after went through several stages of

revision. In the material validation section, you get a percentage by 90% while in the language validation section it gets a percentage of 100%.

3) **Validation of Practitioners (Teachers)**

Table 4. Practitioner Validation Results

No	Aspects observed	Percentage (%)	criteria
1.	Eligibility of material	50	Valid
2.	Display of teaching materials	45	Valid
Average		95%	

Table 4 shows that picture story-based mathematics teaching materials feasible to be tested on third grade students of SD Negeri 6 Lasalepa with 95% validation results that This means that illustrated story-based mathematics teaching materials have very high characteristics good.

From the validation process, many suggestions and good comments were obtained from the validator media expert. This is considered important because the teaching materials developed are story-based pictures which in principle must attract students' learning motivation by means of combine images and colors to match the story presented. Based on analysis of teaching material assessment data by media and material expert validators obtained good results shows that the illustrated story-based mathematics teaching materials developed suitable for use by third grade students of SD Negeri 6 Lasalepa.

DISCUSSION

In essence, development is an educational effort, both formal and non-formal formal activities that are carried out consciously, planned, directed, regularly, and responsibly in order to introduce, grow, guide, develop a foundation personality that is balanced, intact, in harmony, knowledge, skills according to talent, desire and ability as a provision on their own initiative to add, improve, develop themselves towards the achievement of dignity, quality and ability optimal human and independent personality Kurniawati & Koeswanti (2020).

After going through the development process which consists of three stages, namely the Analyze stage (analysis), Design (design), and Development (development), then a research product in the form of mathematics teaching materials based on illustrated stories on operations material numbers for grade III students of SD Negeri 6 Lasalepa.

At the Analyze stage (analysis) the activities carried out by researchers include analysis needs, and curriculum analysis. Based on the needs analysis process, information is obtained that the teaching materials used by teachers are still in the form of electronic school books (BSE), the content of the material and the pictures are still in black and white as well as examples of the existing questions rarely associated with everyday life. Meanwhile, based on curriculum analysis it can be concluded that the material for arithmetic operations is a material that because it is still difficult for class III students to do.

At the Design stage, the activities carried out by the researcher include: collection of references taken from various relevant sources such as books, journals, previous articles and research. Then the preparation of story-based teaching material designs illustrated, which is designed for arithmetic operations material which consists of three parts The main parts are the beginning, the content and the closing. Where each section contains four components that must exist in teaching materials according to Prastowo (2012) namely titles, basic competencies or subject matter, exercises, and assessments This illustrated story approach is designed using Microsoft Office Word 2010 and comics life. The fonts used are Comic Geek, Manga Temple and Comic Sans MS with a size of letters 20, 33, and 11. Meanwhile, the colors used are dominated by blue, gray, green and several other color combinations that match the picture and are designed as attractive as possible possible for elementary school students. This color was chosen because it was adapted to psychological theory which states that the colors favored by children are bright colors such as red, yellow, green, blue, and orange, Dian Permatasari, in Fadillah, & Ika (2016).

The next stage is the Development stage, at this stage Mathematics teaching materials are written based on the designs that have been designed. Teaching materials developed are 1 with 6 learning activities about arithmetic operations number. The prepared teaching materials are equipped with stories and pictures so that they are expected to be able to motivate and facilitate students in learning the material. Teaching materials that have been After being developed, it will be validated by the validator.

Furthermore, the products that have been consulted and revised are validated by two validator to determine the feasibility of the product that has been made and obtain some suggestions and comments on improvement of teaching materials. From the validation process, obtained many good suggestions and comments from media expert validators. Of the many comments, expert validators and practitioners commented a lot on the context pictures and color combinations that considered too monotonous. This is considered important because the teaching materials developed are based on picture stories which in principle must attract students' learning motivation by means of combining images and colors to fit the story presented, Mustaji (2013). Based on the data analysis of the assessment of teaching materials by media expert validators and materials obtained The results show that the picture story-based mathematics teaching materials are developed suitable for use by third grade students of SD Negeri 6 Lasalepa.

After revising the product based on suggestions and comments from media and material expert validators on the validation test. Next, a trial was carried out limited to class III students of SD Negeri 6 Lasalepa, totaling 22 people to find out effectiveness of picture story-based teaching materials. In working on the competency test questions In the teaching materials, students are divided into 5 groups. During the problem solving process students are guided by teachers and researchers. During the use of story-based teaching materials

illustrated number operation material, students look enthusiastic to follow the process ongoing learning because the content of the teaching materials contains stories and pictures that they often encounter in everyday life, both at school and outside school.

CONCLUSION

1. This illustrated story-based material product is one of the materials development products teaching materials in the form of books that will be used as a learning reference when implementing teaching and learning activities in the classroom. The resulting teaching material products are in the form of printed teaching materials based on picture stories arranged according to the needs of students based on observations in the field and has the following specifications:
   a) This teaching material consists of three parts and contains several components, namely the initial part (outer cover, introduction, table of contents, study guide, characterizations), the main part (map concepts, teaching materials, practice questions, material summaries, formative tests, formative test answer keys and ability test), closing section (bibliography, glossary, author biography, cover behind).
   b) This illustrated story-based mathematics teaching material is designed using communicative language and there are few terms of the Muna regional language so that teaching materials this can be meaningful in the hearts of students. c) Teaching materials contain pictures that are often encountered by students as well as stories easy for students to understand.
2. Research on the development of illustrated story-based mathematics teaching materials through several stages, namely the analysis stage or observation stage, the design or planning stage, the test stage product try, evaluation stage, revision stage and product refinement.
   1. The teaching materials developed are only limited to number operations.
   2. These teaching materials have gone through a validation process by experts in their fields.
   3. Judging from the validation results from media experts, material experts, and teacher responses, it can be concluded that that the teaching materials developed by this researcher are feasible to use. Thing This is evident from the questionnaire given to the validator with the following results:
      a. The presentation of media experts is 80%, which means that in terms of the content of the design of the teaching materials, worth using.
      b. The presentation of material experts is 95%, which means that in terms of the content of the design of the teaching materials, it is very good worth using.
      c. The presentation of the questionnaire given to the class teacher is 95% which means the design teaching materials are very feasible to use.

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THE EFFECTIVENESS OF ANIMATION ASSISTANT NPT (NUMBER PROBLEM TOGETHER) LEARNING MODEL IN IMPROVING ABILITY GENERALIZATION OF CLASS VIII STUDENTS OF SMPN 2 TONRA

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Abstract. The purpose of this study was to see how to improve students' mathematical generalization abilities through the NPT (Number Problem Together) model assisted by animated video media. The experimental method used was quantitative methods, the research design used was quasi-experimental (quasi-experimental) using the nonequivalent control group design, in which two groups were randomly selected. The population in SMP Negeri 2 Tonra with the sample used was purposive sampling consisting of the control class, namely class VIII A and the experimental class, namely the VIII B NPT (Number Problem Together) learning model. The results showed that the students 'mathematical generalization abilities with the NPT (Number Problem Together) model increased by 35.31%, compared to the students' mathematical generalization abilities with Discovery Learning.

Keywords: Generalization ability, NPT (Number Problem Together) model, video animation

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INTRODUCTION

More creative in applying and developing mathematics as a basic science in linking learning to everyday life so that the ability that can be trained through learning mathematics is the generalization ability of students. Lesmana *et al.*, (2018:865) generalization ability is an important component of mathematics, wherewith the aim of changing ways to make generalizations easier, compiling facts by following opinions in mathematical form. Inline (NCTM) 2000) that mathematics subjects need to think and think in developing an idea to understand learning to be able to make generalizations.

Generalization is one of the stages in interpreting the material being studied, where each individual can take substance from the learning path that has been done previously (Pertiwi et al., 2018:2017:371). According to Rizkiyah & Rahaja (2018:4) explaining that students' generalization abilities help individuals improve communication habits, can broaden insight so that students can make conclusions quickly and accurately, so that generalization of thinking processes will be the main capital in understanding a mathematical perception in connecting a fact so that students can summarize the essence of the material.

However, the weakness in generalizing is that it is very difficult for students to find mathematical concepts well, due to the weak generalization ability in Indonesia as evidenced by sources in the view of a survey conducted by PISA in 2018, where the State of Indonesia is in the low order of acceptance of the quality of education, in the order of 69 of 73 countries. One of the difficulties of students in learning is that they do not understand the questions given, the difficulty of proving the right way and determining the right strategy to use, and the lack of material restrictions.

In addition, based on the results of consultations with one of the mathematics teachers at SMP Negeri 2 Tonra, information was obtained that students were not accustomed to or rarely trained in solving problems that have generalization abilities. Based on the flow of the learning process in the classroom tends to be teacher center which is characterized by the use of the lecture method. Novita et al., (2016) the lecture method is a method that is monotonous, rigid, does not construct student knowledge, does not provide opportunities for all individuals to express their opinions so that it is unable to increase generalization.

Based on these problems, educators must try to make the learning process interesting through creative and innovative learning models to improve generalization abilities. Therefore, one of the proposed methods to solve the generalization problem of students is to study the application of active learning models. Learning models are needed to help improve generalization skills by looking for learning models. Discovery learning is a kind of self-discovery to acquire concepts. One of the weaknesses of the discovery learning model is that everyone is created independently, so they don't want to share it with others.

One way to cover the shortcomings of the learning model found by researchers is to use the NHT (Numbered Head Together) model to determine the learning model. The NHT (Numbered Head Together) model can provide individual flexibility for teams to assign tasks. Consistent with Nursaputra & Torang (2017: 108), the NHT (Numbered Head Together) model is a group discussion model that will provide opportunities for all team members to share knowledge with the group team (Marlina et al., 2019).

In addition, by exploring improvements between the two learning models and NHT (Numbered Head Together) to create a new learning model, namely the NPT (Numbered Problem Together) learning model, it will improve generalization abilities. Individuals or groups learn in the process and solve problems raised by educators through collaboration between teams, thereby creating positive, interesting, and collaborative learning. On this basis, students' learning abilities can be developed by students' learning abilities with tests in the form of quizzes that will be given to give students' interest in the evaluations distributed by educators. Based on the description above, the researchers are interested in conducting a study on "The Effectiveness of Animation-Assisted NPT (Number Problem Together) Learning Model in Improving Students' Generalization Ability"

METHODS

His research uses quantitative research with a quasi-experimental research design type non-equivalent control group design. The sampling technique used non-random sampling with purposive sampling type, where class VIII a many as 15 students as the experimental class using the NPT (Number Problem Together) learning model and VIII b as many as 15 students as the control class using the discovery learning model. The data collection technique used is a questionnaire, a test (Marlina et al., 2020). The nonequivalent control group design pattern used is as follows:

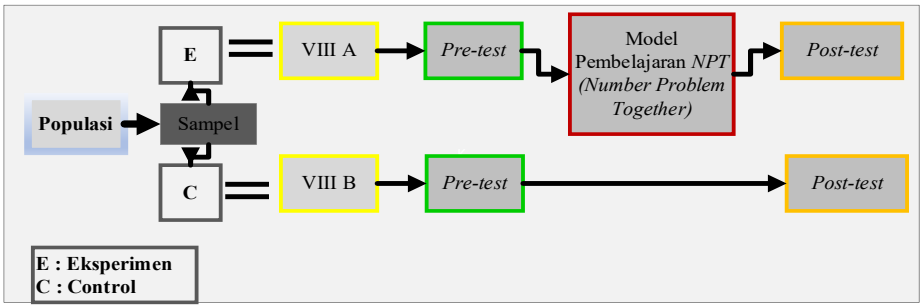

Figure 1. Research Desaign *Non-Equivalent control group design*

RESULTS

Based on the results of research on the generalization ability of students using the NPT (Number Problem Together) learning model regarding the material for building flat sides by motivating students to learn about learning. Based on data analysis on the effectiveness of the animation-assisted NPT (Number Problem Together) learning model in improving the generalization ability of students, it is described in the following discussion as follows:

1. N-Gain Test

   The gain normality test, namely the increase in the average pretest and posttest scores was calculated using the normalized average gain formula. Gain is the difference between the values between the pretest and posttest scores, the gain indicates an increase in the generalization ability of students after learning is carried out to avoid research bias conclusions. The gain normality test is to determine the generalizability of the experimental class so that an analysis of the pretest and posttest is carried out. The results of N-gain are shown in table 1 below.

   Table 1 N-Gain Test for Control Class and Experiment Class

Class	Gain	Std. Error Mean
Control	27.23	0.45%
		Currently
Experiment	43.72	0.74%
		Tall

   Adapted from Research Data that has been processed with SPSS

   Based on table 1 of the gain normality test, it can be concluded that the increase that occurs after the application of the NPT (Number Problem Together) learning model is in the high category of 0.74 (74%), then the control class with the application of the discovery learning model is in the medium category of 0.45 (45%). Based on the N-gain

data analysis test above, it can be concluded that both the experimental and control classes have increased, but the increase in the experimental class is higher than the control class,

2. Test *Effect Size*

The results of the effect size analysis to determine the effect before the application of the NPT (Number Problem Together) learning model in the experimental and control classes using the discovery learning model, then an effect size test analysis was carried out. The analysis was carried out using the Cohen formula, sd

Table 2. Effect Size Test on Experimental Test

Effect Test	Class Control	Class Experiment
d Effect Size (Maximum Likelihood Estimator)	3.125	7.635
g converted to r Effect Size	0.835	0.966

Adapted from Research Data that has been processed with Calculated Effect Size

The results of the effective contribution of treatment, namely the application of the NPT (Number Problem Together) learning model in improving the generalization ability of the experimental class students obtained a value of d = 7.637 and an effect size based on r = 0.966, this result is in the category of large effects or means the application of the NPT learning model (Number Problem Together) is effective in improving students' generalization ability. Meanwhile, in the control class, it can be seen that the application of the discovery learning model also contributes effectively to the generalization ability of students by d = 3.125, and the effect size is based on r = 0.835, this result is in the moderate effect category. Based on the results of data analysis, it can be concluded that the application of the NPT (Number Problem Together) learning model is more effective in improving students' generalization abilities than the discovery learning model.

DISCUSSION and CONCLUSIONS

DISCUSSION

The purpose of this study was to test the effectiveness of the NPT (Number Problem Together) learning model on the generalization ability of students in class VIII of SMPN 2 Tonra. In this study, the researchers previously tested the feasibility of the test items so that they could be used as research instruments. Problem pretest and posttest researchers have prepared 3 items with the three indicators of generalizability students. Questions that have been valid and reliable, the researcher will conduct a pretest and posttest in the research class. The following is an explanation of the answers and formulation of the problem in this study, namely as follows:

1. The use of the NPT (Number Problem Together) learning model in class VIII of SMPN 2 Tonra

One of the models that will build student learning activity is the NPT (Number Problem Together) learning model. The NPT (Number Problem Together) learning model is that students as a whole in the learning process will understand the material being taught, so they can conclude (Wijayati et

al., 2020). The teaching and learning process in which educators are responsible for developing a free atmosphere for students to be able to study more interesting learning, so that students can issue ideas and creativity (Yustika & Prihatnani, 2019:481; Nursaputra & Purba, 2017:118; Vitoria & Akhwilla, 2018:13; AMIT Asfar et al ., 2021). The design of the NPT (Number Problem Together) learning model is as follows as shown in Figure 2:

The following is the design of the learning process with the NPT (Number Problem Together) learning model both offline and online, which can be seen in Figure 2 and Figure 3, as follows:

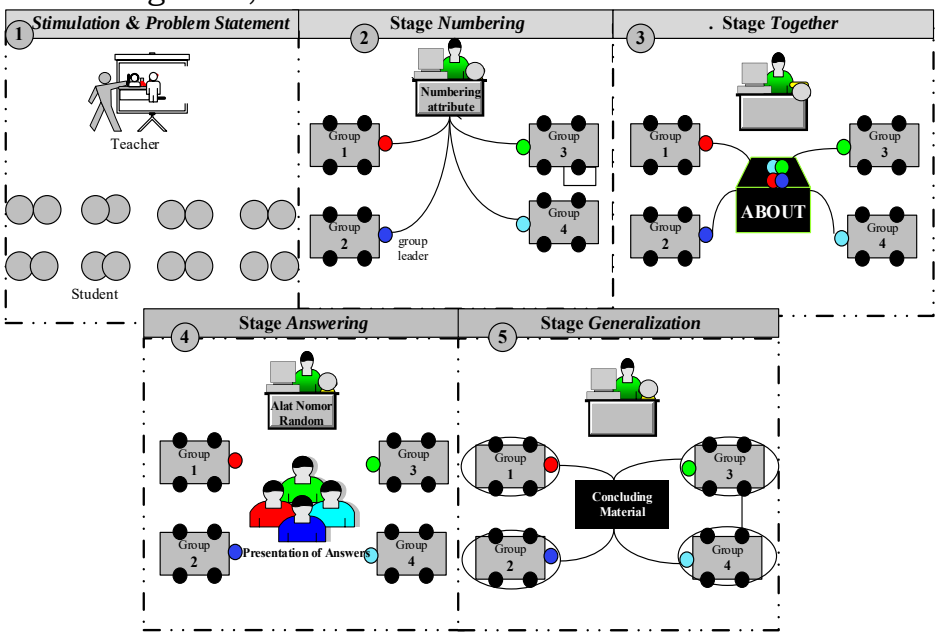

Figure 2
Offline Learning Process Design with NPT (Number Problem Together) Learning Model

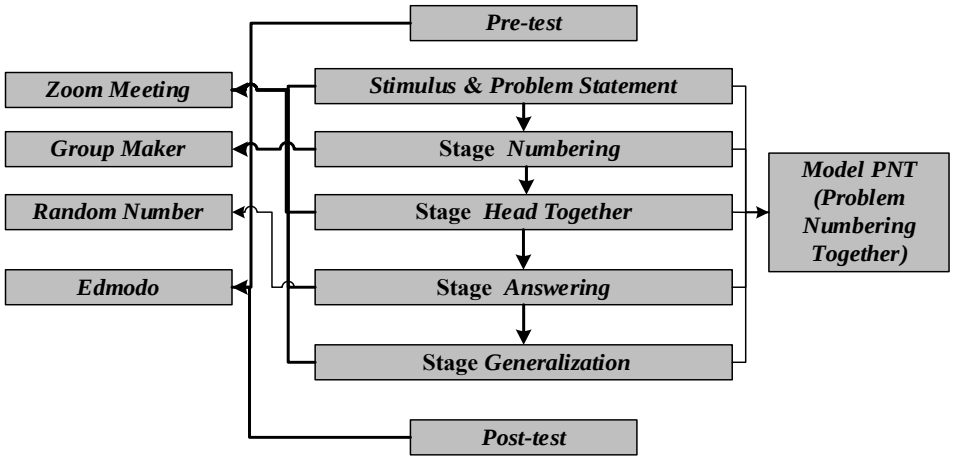

Figure 3 Online Learning Process Design with NPT (Number Problem Together) Learning Model

Based on the design of the learning process by the learning model NPT (Number Problem Together) is offline as well as online in figure 2 and figure 3 can be explained in detail the stages of the learning model NPT (Number Problem Together) which can be seen in Table 3.

Table 3 Stages in NPT (Number Problem Together) Learning

No	Syntax	Teacher activities	Student activities
1	*Stimulation & Problem Statement*	• The teacher provides stimulation to students in the form of questions by presenting an animation	• Students listen to the questions submitted, then answer the questions spontaneously by paying attention to the video that is displayed
2	*Numbering*	• The teacher divides students into several groups or teams consisting of 3-5 people with different abilities. • The teacher gives the students a number so that each student in the team has a different number. • The teacher forms a team of experts (group leader) in each group • The teacher distributes question sheets and group answer sheets	• Students divide themselves into several small groups. • Students remember the given number. • Students take questions based on random results in their groups • Students take the question sheet and answer sheet given
4	*Heads together*	• The teacher provides opportunities for students to discuss in groups and directs the course of group discussions.	• Students think together to describe and ensure that everyone knows the answer.
5	***A**nswering* **(**Pemberian jawaban)	• The teacher mentions a number at random and asks students with that number to state the answer or present the results of their discussion in front of their friends	• Students from each group with the same number raise their hands and prepare answers for the whole class
6	*Generalization* (Menyimpulkan)	• The teacher gives directions to conclude the material	• Students conclude the material that has been discussed at the meeting

The learning model has a strategic role in the success of the teaching and learning process in gaining in-depth understanding (Asfar, AMIT, et al., 2019). A learning model that will bring students to a fun learning atmosphere

and make it easier for students to absorb the material being taught (Asfar AMI A & Nur, 2018).

Based on the COVID-19 pandemic, which requires schools to conduct online learning. Online learning is a learning system that utilizes electronic media as a tool to assist learning activities, thus enabling the educational process without going through face-to-face meetings and the development of knowledge to students can be done easily with the use of social technology to build a social learning environment such as the Zoom application. the meeting, Edmodo, group maker, and a random number. The explanation of the application used in online learning is based on the stages of the design of the learning process with the NPT (Number Problem Together) learning model as follows:

a. Zoom Meeting
   The zoom meeting application is an application that can be used to facilitate independent learning from home by teachers and students. Based on the stimulation stages, the teacher provides stimulation in the form of questions to students. Furthermore, the problem statement (problem identification) is that the teacher displays an animation related to everyday life, as an illustration, to be studied and explains the material about the flat side space so that online learning will use a zoom meeting to display animation and material. In addition, videos and materials will be sent through the Edmodo group so that students can study the videos and materials at any time.
   In addition, researchers will use the zoom breakout room, students are allowed to collaborate with their group teams by discussing questions that have been distributed by the teacher.
b. Group Maker
   Based on the numbering stage, the teacher divides the groups heterogeneously, which will be formed by a team of experts and will be distributed numbering heads to each member of the group, so that in online learning the group maker application will be used to divide groups.
c. Random Number
   The random number application is used to randomize the serial number of each group and the selected number will represent the group to present the results of the answers to other groups.
d. Edmodo
   The Edmodo application is used to share individual tasks, both pretest and posttest questions, attendance, and quizzes regarding the material for flat-sided geometry. The existence of the Edmodo application makes it efficient for teachers to monitor students who have collected their assignments. The NPT (Number Problem Together) learning model above shows the learning process from beginning to end, starting with the Stimulation stage to the generalization stage. The teacher in this case acts as a facilitator and it is the students who play an active role in solving the problems given.

The zoom meeting application can be used to present the material to be studied and display animations in the form of videos.

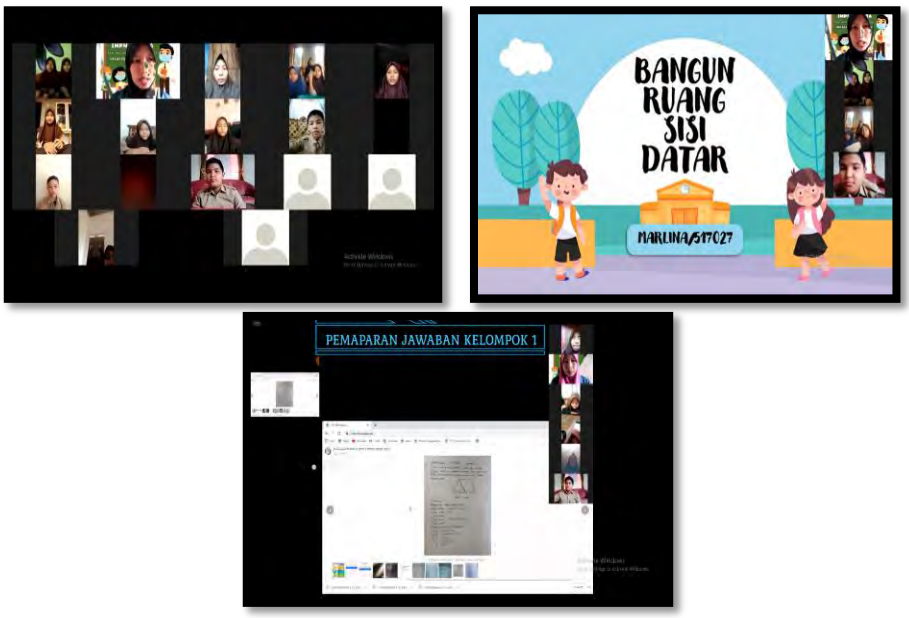

Figure 3. The Learning Process Using the Zoom Meeting Application

After that, students are divided into groups using the group maker application, so that based on the results the names contained in the application are distributed to students. Furthermore, group collaboration using the Zoom Meeting application with a breakout version will solve a problem given by the educator. Furthermore, after discussing with the group team, the answers will be presented by selecting a representative for each team using a random number application. Then the generalization stage will be carried out, namely the inference stage from students on the material that has been studied. The role of the educator is as a mediator to mediate student learning activities and as a facilitator to provide facilities or convenience in the teaching and learning process.

2. Differences in Generalization Ability of Students Before and After the NPT (Number Problem Together) Learning Model in Class VIII of SMPN 2 Tonra

The results of the instrument test that have been applied by researchers by providing pretest questions at SMPN 2 Tonra with the number of students 15 students as the research sample, where the average value obtained is 33.01. Based on the results of the pretest, the student's test results before using the NPT (Number Problem Together) model were still in the quite effective category. Based on this, it is stated that there is an increase in student learning in this study, where there is a difference between the use of the learning model.

Furthermore, increasing generalization skills after the application of the NPT (Number Problem Together) model which will begin with understanding contextual problems, namely educators will first provide reality problems related to everyday life through the zoom meeting application. Then the educator gives a direction by solving a problem that will be given by motivating students to answer individually by providing opportunities for group teams to discuss the results of their answers in groups through the breakout version

of the Zoom Meeting application. At the end of the lesson, students both make a conclusion statement on the Edmodo application to make it easier for the teacher to assess student understanding.

By the opinion (Veronica et al., 2020) that learning mathematics is one way of transferring mathematical concepts from educators to students so that educators can relate the learning process to the context of reality with flat-sided space building materials. Furthermore (Triawan & Sylviana, 2018) said that "students find it easier to understand a learning material when students learn by using the NPT (Number Problem Together) model". In addition, the student learning process looks active, enthusiastic, and trying to find solutions to the problems given either through google or books or modules. Based on some of these discussions, the researchers concluded that "There is an Effectiveness of Animation-Assisted NPT (Number Problem Together) Learning Model in Improving Generalization Ability".

CONCLUSION

As for the results and discussion regarding the effectiveness of the NPT (Number Problem Together) model assisted by animation in improving the generalization ability of class VIII SMP Negeri 2 Tonra, the researchers can conclude, namely:

1. Model NPT (Number Problem Together) assisted animation, used effectively in enhancing the ability of generalization, which has five stages of the learning process that stimulation, problem statement, Number, heads together, and answering that is student-centered. Based on the results of the effect size test, it was obtained that 0.835 in the control class was included in the medium effect category while the experimental class obtained 0.966 including the high effect category.
2. The generalization ability experienced a change in the increase after applying the NPT (Number Problem Together) model with the aid of animation. Based on the gain normality test, the results obtained are 0.035 in the control in the low category, while in the experiment the results are 0.489, which means that it is in the medium category.

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PARENTAL COMMUNİCATİON STRATEGY TO EARLY CHİLDHOOD İN CHARACTER BUİLDİNG DURİNG THE PANDEMİC

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Abstract. This study aims to determine the communication strategies used by parents in shaping the character of early childhood, especially during the pandemic. This study uses a case study method with interviews with 2 fathers and 4 mothers. The results showed that the duties of parents increased along with the pandemic, especially at home. And of course in terms of character building for early childhood they must have a special strategy and share tasks between husband and wife. The strategies used are inviting children to communicate, providing time to chat with children, having time to eat together with children and their families, giving praise, caresses, kisses or other forms of affection to children, trying to create warmth and comfort for children at home. , being a role model for children, responding when children ask something, instilling good character values in children, teaching three key words (please, sorry, and thank you), and getting used to a healthy life. But the most important thing is that parents must be able to be role models and role models for children.

Keywords: Communication Strategy, Early Childhood, Character Building, Pandemic Period

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INTRODUCTION

The pandemic situation that has not ended in Indonesia of course requires the Government and all its citizens to always take care of themselves by implementing health protocols wherever they are. This is necessary to reduce the spread of the Covid-19 virus. The pandemic condition has also caused many changes in various sectors and education is no exception. Many parents have been affected by the layoffs and even if they are still working they have to work from home. Of course this will have an impact on the family and require adaptation in order to make peace with the situation so that life in the family continues as it should.

Parents have a very important role for early childhood, especially in character building. Because parents are close and have a lot of time with their children. So that parents, especially mothers, as the first and foremost madrasa for children have an important role in guiding attitudes and basic skills in children such as character building through religious education to introduce rules so that children are able to obey (Nurlaeni & Juniarti, 2017). This is of course done by teaching children through good habits in the family. In this case, Father as the owner of the madrasa also has a role that is no less

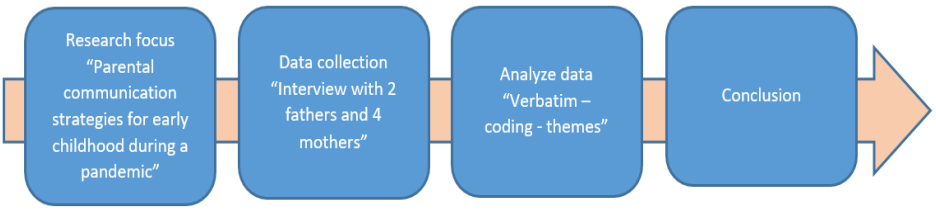
urgent than Mother. The synergy between the two is very necessary so that there is no inequality in carrying out roles in the family. Moreover, the pandemic conditions that require parents to maximize their duties on the growth and development of children.

The formation of early childhood character really needs to be instilled. To be able to make it happen, parents must be able to communicate it to their children (Sabarua & Mornene, 2020). Communication needs to be done by parents to children to convey ideas that parents have so that they can be carried out in the form of actions by children. Because the communication process between parents and children should be able to strengthen the relationship between the two. So that when there is no distance between the two, the message conveyed by parents will be easily accepted by the child (Zainab, 2017). Children are like white paper and parents are responsible for painting on the white paper.

For that we need the right communication strategy by parents in shaping the child's character (Kinanti & Rakhmad, 2019). Thus parents will understand the condition of the child before conveying the message to the child. And because the message to be conveyed is related to character building, parents must be able to serve as role models or role models for children.

METHODS

This study uses a case study method, which is a research design used to reveal in more detail and comprehensively the situation of the object being analyzed (Alwasilah, 2002). Yin stated that case studies are very suitable for answering "how" questions because these types of questions will explore data more deeply (Yin, 2003). In this case, the research analyzes the communication strategies of parents to early childhood in character building during the pandemic. The subjects in this study were parents who had six early childhood children (two fathers, four mothers). The data collection



technique used was interviews and the data were analyzed using thematic, namely analytical techniques that emphasize the preparation of coding with reference to research questions that have been determined. So that the themes are arranged according to the research questions and become a reference in explaining the phenomena that occur (Heriyanto, 2018). The research flow can be seen in the following figure:

RESULTS

The pandemic situation that has not ended yet seems to make it clear that the main function of the family is as the main basis for activities by each family member. The family is a place for caring for, nurturing, educating, and instilling good values in children and communicating with fellow family members. As expressed by one parent as follows:

"...during the pandemic because parents spend more time at home, communication with children must also be maintained. Moreover, the little one talks a lot, so communication must be intense too... (YG interview excerpt)".

Communication is very important in the formation of children's character. Because it is impossible for a child's character to be formed without communication between parents and children (Bahri, 2018). With the establishment of communication between parents and children, the child's language skills and abilities will develop. Communication that is established will also be more effective because it will get feedback from children. This is where the role of parents is to be able to carry out their role in understanding the condition of the child when they want to convey and include the values of character building in children. Well, when communicating with early childhood, eye contact is required. This is because early childhood is difficult to sit still, listen with focus when their parents talk. So the strategy of parents is needed so that the interaction in the communication process with children becomes effective and intense. Specifically, parental communication strategies in the formation of early childhood character will be described as follows:

Availability of Time to Engage with Children

Time is a very important thing to be used, especially for parents to be filled with useful things because the age of a child cannot be repeated. The existence of parents who are given the responsibility to work from home makes more time for children. Because working from home is not self-willed, but rather obeys the rules set by the institution where you work (Mavianti, 2020).

"...working from home makes spending time with children more intense. Children are more with their parents...(excerpt from HD interview)".

Whatever the conditions in the family during this pandemic, we must be grateful. And as parents, when interacting with children, they still include good character values for children (Rofiq & Nihayah, 2018). Although the impression is while playing but as a must understand that that's how their world is now. So that the time spent chatting becomes meaningful and provides an experience that will be stored in the child's memory.

Availability of Time to Eat Together with Children and Families

Very grateful for families who can enjoy eating at the dining table with family members. And parents should take advantage of moments like this as wisely as possible.

"...at the dinner table, there is still an inculcation of character values for children. For example, eating and drinking with the right hand, not talking when eating... (excerpt from PR interview)

The communication that parents and children make will be partnered with and used as an example for him to communicate and automatically shape the child's character (Sabarua & Mornene, 2020). And with communication, parents can also know the development and growth of children so that if something is not right, solutions can be found to solve problems faced by children.

Giving Praise, Caress, Kisses or Other Forms of Affection to Children

Family treatment of children can affect the development and character of children. Families who treat their children gently will get the character of a gentle child as well. Vice versa, if the family treatment is rude and temperamental to the child, such a child's character will be formed (Utami & Prasetyo, 2021). So as a parent it is very important to give appreciation to children related to the smallest good things that children do.

"...usually give a kiss to the child if he wants to help his father or mother. For example putting dirty dishes in their place...(Excerpt from PW interview)".

Good habituation of even the smallest things needs to be done to children so that good and independent characters are formed from an early age. Because the value of character in a person is the inherent differentiator between humans and animals (Suasthi & Suadnyana, 2020). As for praise, caresses, kisses or other forms of affection for children, it is necessary to do so that children feel that their presence in the midst of their parents is very meaningful.

Creating Warmth and Comfort for Children at Home

Children are family members who come from the family and will return to the family. For this reason, it is very necessary for parents to create a home as a place to return and to pour out all complaints and tell stories to their parents at home. Thus, you will feel the warmth and comfort that you cannot find anywhere other than in your own home (Wahyuni & Putra, 2020).

"...as parents always try to create comfortable and warm home conditions for children, so that children feel at home...(MI interview excerpt)".

In addition to quality time when together with children, it is necessary to create warmth and comfort for children at home. So that the comfort and warmth he receives will become his character and become the basis when he builds his family in the future.

Becoming an Example for Children

Is to be a great imitator or the best imitator. For this reason, parents must be able to maintain their attitude when in front of their children. Because we realize it or not, every parent's movements are always under the supervision of the child.

"...agree with your husband, however, if you are angry with your partner, don't show it in front of your children.... But after all, sometimes children feel that their parents are angry...(MI & NH interview excerpt)".

One important thing that parents must be able to do in the care and education of their children, whether during the pandemic or not, is to be an example for children at home (Dewi & Khotimah, 2020). By understanding the child's personality so that parents will also easily determine the right communication strategy in giving advice messages to their children.

Responding to Children When Asking Something

Early childhood is a period where children have a very high curiosity in addition to developing language development as well. As parents, we are grateful that children have many questions and to be able to answer children's questions, parents must have a lot of knowledge (Wiguna & Sunariyadi, 2021). Therefore, parents also need to upgrade their knowledge so that they can answer children's questions in language that is easy for children to understand.

"...sometimes I get annoyed when my child has a lot of questions. But it must be served so that children are not disappointed...because if they are disappointed because they are not considered it will make an impression on their hearts...(YG & HD interview quote)".

It takes unusual skills in order to be able to respond to children's questions while the condition is tired, tired. Because if you don't, it's feared that you will do things outside of logic. This of course will have an impact on the psyche and character of the child.

Teaching the Three Keywords (Please, Sorry and Thank You)

Three keywords that should not only be taught by parents to young children are please, sorry and thank you. However, most parents, due to their ego, are reluctant to apply these three keywords. And in essence these three keywords can be applied through effective communication (Rahmawati & Gazali, 2018).

"... teach children to ask for something to use the word please....if I'm wrong, don't hesitate to say sorry....and if the child wants to be asked please also say thank you....in essence the words please, sorry and thank you are familiar to children's ears first...(interview excerpt YG, PR, PW & NH)".

Simple things that are implanted through these three keywords will have a big impact when children grow up. Because it has been instilled since childhood, it will be carried over and embedded into adulthood.

Getting used to a Healthy Life

Parents certainly want all members of their family to be in good health. And a healthy lifestyle is not only applied at home because of the pandemic conditions. No pandemic also still have to implement it. And during a pandemic, it is better known as implementing health protocols wherever they are.

"...pay attention to nutrition for family members,...wear masks, hand sanitizer and avoid crowds,...sunbathe in the morning,...(excerpts from interviews with NH, MI, & PW)".

Parents in training their children to adopt a clean and healthy lifestyle are in line with positive parenting programs that aim to develop individual capacities for self-regulation (Sanders, 2008). In this case, parents play a role

in educating their children to always maintain personal and environmental hygiene with simple examples of washing hands and throwing garbage in its place (Ihsani, I, Santoso, 2020).

DISCUSSION and CONCLUSIONS

The discussion in this study is that not all parents who have early childhood during the pandemic have a lot of time to stay at home. This is due to the economic demands of the family, especially for the father as the head of the family. Meanwhile, the mother carries out her role by helping the family economy from home. Likewise, they as parents want the best for their children. Even with the conditions they have to accept during the pandemic, they have to leave the house to work.

The results show that in general, parents who have early childhood have special communication strategies in shaping their child's character during the pandemic. The strategies used include inviting children to communicate, providing time to chat with children, having time to eat together with children and their families, giving praise, caresses, kisses or other forms of affection to children, trying to create warmth and comfort for children. at home, being a role model for children, responding when children ask something, instilling good character values in children, teaching three key words (please, sorry, and thank you), and getting used to a healthy life. But the most important thing is that parents must be able to be role models and role models for children.

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INTERACTİVE MULTİMEDİA DEVELOPMENT FOR 7TH GRADE JUNİOR HİGH SCHOOL ON SETS

Muzanip Alperi, Lembaga Penjaminan Mutu Pendidikan Provinsi Bengkulu

Abstrak. Interactive Multimedia that stimulates independent learning is very appropriate to be developed in the distance learning period. This study aims to develop interactive multimedia based on storylines for class VII at SMPN 12 Bengkulu City. This research is a type of Research and Development (R&D) research model development with steps analysis, design, development, implementation, and evaluation. The subjects in this study were students of class VII in one of the classes of SMPN 12 Bengkulu City, othe sum of students 32 people. In determining the validation and perfection of the media, the researcher found with media and material experts. The source of the data in this study is the validation results obtained from media experts and material experts as well as questionnaire data. The data obtained were then analyzed and presented in the form of tabulated data in tables and figures. The results of the study show interactive multimedia development is very necessary, more than 90% of respondents expressed interest in using interactive multimedia. The design is designed starting from the introduction, materials, exercises, summaries and evaluations. The results of expert validation show that the language, materials, and media that are made are very suitable for use in 7th grade junior high school mathematics subjects with scores of 85 for language, 90 for material, and 92 for media.

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PENDAHULUAN

Pembelajaran jarak jauh yang diterapkan di masa pandemi COVID-19 masih menyisahkan permasalahan diantaranya tentang fasilitas, jaringan internet, dukungan orang tua, dan pengaruh lingkungan (Indahri, 2020).

Pembelajaran sekarang ini disebut juga dengan pembelajaran era baru yaitu era dimana media pembelajaran banyak menggunakan teknologi informasi (TI). Mengakses sumber belajar dapat dilakukan dimana saja dengan menggunkan perangkat dan jaringan internet. Teknologi yang canggih dan kemampuan dalam mendapatkan informasi tanpa batas adalah ciri dari era baru dalam dunia digital. Perkembangan teknologi yang semakin pesat tidak dapat dihindari dampaknya bagi dunia pendidikan. Kondisi baru saat ini menuntut bidang pendidikan agar senantiasa beradaptasi terhadap perkembangan teknologi untuk meningkatkan mutu pendidikan (Budiman, 2017).

Semua mata pelajaran menerapkan pembelajaran jarak jauh tidak terkecuali mata pelajaran Matematika. Media yang baik adalah media yang menarik, bervariasi, dan tepat guna. Semakin baik dan bervariasinya media pembelajaran, semakin baik pula pencapaian standar kompetensi lulusan (Alperi & Handayani, 2019).

Berdasarkan hasil wawancara dan analisis kebutuhan media pembelajaran, pembelajaran matematika jenjang SMP sangat membutuhkan media yang interaktif dan menarik (Rafianti et al., 2018).

Pembelajaran jarak jauh (PJJ) artinya siswa dan guru tidak selalu hadir secara fisik dalam waktu bersamaan di sekolah. Pelaksanaan PJJ ini dapat dilakukan secara penuh atau *hybrid* dan bisa juga secara campuran yaitu jarak jauh dan pembelajaran di kelas (*blended*). Pembelajaran reguler lebih menitikberatkan pada pertemuan atau pembelajaran tatap muka.Sementara itu PJJ lebih banyak menggunakan bahan ajar berbasis teknologi komunikasi yang memegang peranan penting dalam pencapaian proses dan hasil belajar. Pendidikan Jarak Jauh(PJJ) ditandai dengan keterpisahan fisik antara peserta didik dengan guru (Moore, G.M. & Kearsley, G., 2012). Pembelajaran Jarak Jauh adalah suatu bentuk aktifitas belajar mengajar yang direncanakan dan berjalan dengan normal pada lokasi yang berbeda antara sumber belajar dalam hal ini guru dengan orang yang belajar yaitu siswa.

Pembelajaran jarak jauh untuk sebagian guru masih menjadi kebingungan dalam menentukan model. Pelaksanaan PJJ memerlukan desain dan teknik khusus yaitu melalui penggunaan media elektronik dan wujud media lainnya (Pribadi & Sjarif, 2010).

Perlu dilakukan penyesuaian kondisi siswa, guru, dan media pembelajaran yang tersedia. Dalam rangka mewujudkan keberhasilan pembelajaran secara maksimal, maka diperlukan adanya sinergisitas diantara 3 aspek utama dalam pembelajaran, yaitu guru, siswa dan media pembelajaran (Denih Handayani & Rahayu, 2020).

Dengan perkembangan teknologi informasi masa sekarang, guru harus mampu untuk memnggunakan teknologi untuk mengembangkan media pembelajaran yang berbasis multimedia agar semakin menarik, interaktif, dan komprehensif (D Handayani et al., 2021).

Dalam pembelajaran jarak jauh kendala yang dihadapi adalah kemandirian belajar. Kemandirian belajar pada kegiatan pembelajaran merupakan unsur penting dalam penentuan hasil belajar. Terdapat hubungan positif diantara kemandirian belajar dan prestasi belajar (Fatihah, 2016). Upaya peningkatan kemandirian pada siswa dapat dilakukan dengan upaya pengembangan proses belajar mengajar yang demokratis, mendorong partisipasi aktif pengambilan keputusan, memberikan kebebasan mengeksplorasi lingkungan, mendorong rasa ingin tahu, tidak membeda-bedakan antar anak, dan menjalin hubungan yang baik {Suid dan Syafrina, 2017}.

Pada masa pandemi covid- 19 dengan penerapan PJJ proses pembelajaran banyak dilaksanakan melalui *online*. Salah satu media baik digunakan adalah multimedia interaktif. Multimedia interaktif adalah alternatif yang bisa digunakan untuk meningkatkan kemandirian belajar (Alperi, 2021).

Pada pembelajaran Kimia media interaktif cocok digunakan untuk meningkatkan mutu pembelajaran, media pembelajaran kimia interaktif sistem koloid mendapat pendapat yang baik dari siswa(Padmanaba et al., 2018). Multimedia interaktif pembelajaran kimia pada materi hidrokarbon

efektif untuk meningkatkan prestasi belajar siswa (Nazalin & Muhtadi, 2016) .

Berdasarkan beberapa fakta dan alasan yang diungkapkan, sangat perlu dilakukan analisis dan pengembangan multimedia interaktif dalam menagstasi masalaha pembelajaran di era pandemi COVID-19 pada mata pelajaran matematika.

Penelitian analisis ini bertujuan untuk mengembangkan multmedia interaktif pembelajaran matematika SMP. Lebih khususnya tujuan dari penelitian ini adalah melihat kelayakan multimedia Interaktif pada pembelajaran matematika SMP.

METODE

Metode yang digunakan adalah penelitian dan pengambangan dengan model ADDIE. Model pengembangan ADDIE terdiri dari lima tahapan, yaitu: Analysis, Design, Development, Implementation, dan Evaluation (Dick & Carry ,1996). Produk yang dikembangkan adalah multimedia interaktif dengan menggunakan aplikasi articulate storyline pada mata pelajaran matematika materi himpunan.

Analisis ini dilakukan sepanjang bulan September dan Oktober 2021, dengan
tahapan kegiatan terdiri dari: (1) menganalis kebutuhan mudia, (2) mendesain materi dan media yang akan digunakan, (3) mengembangkan multimedia interaktif dengan menggunakan aplikasi articulate storyline, (4) melakukan penerapan dengan uji coba, (5) melakukan evaluasi.

Subjek dalam penelitian ini adalah media interaktif mata pelajaran matematika SMP kelas 7 materi himpunan. Objek sasaran penelitian adalah siswa SMP kelas 7, sampelnya adalah siswa SMPN 12 yang berjumah 32 orang.

Tahap Analisis

Tahap analisis hal yang dilakukan adalah melakukan observasi dan penyebaran kuisioner kebutuhan media melalui google form dengan tujuan untuk mengetahui dan mengidentifikasi kebutuhan media terutama pembelajaran di masa pandemi COVID-19. Indikator yang tanyakan adalah media yang digunakan selma ini, motivasi belajar siswa, pengenalan media interatif, dan ketertarikan dengan media interaktif.

Tahap Desain

Pada tahap perancangan atau desain yang dilakukan adalah penentuan materi yang sesuai dengan analisis kebutuhan, merancang materi agar materi yang ditampilkan menarik dan memotivasi belajar mandiri. Didesain juga terkait bentuk penulisan, tata letak media, interaksi dan umpan balik, warna, video, audio, gambar, animasi, latar belakang, menu, tombol-tombol. Bagian yang dipersiapkan adalah Halaman Depan dan login, Pendahuluan, materi, latihan, rangkuman, evaluasi, dan referensi materi.

Diperlukan referensi yang mendukung. Pada tahap ini juga di rancang instrumen validasi media untuk para ahli pengembangan media, bahasa, dan konten materi matematikanya.

Tahap Pengembangan

Pada tahap pengembangan dilakukan pembuatan media dengan aplikasi yang sesuai. Multimedia interaktif yang digunakan adalah

articulate storyline. Pada tahap ini juga dilakukan validitas oleh tim ahli (media, bahasa, dan konten materi). Setelah dipandang layak selanjutnya multimedia siap di ujicobakan.

Indikator kelayakan dari tampilan media adalah keterbacaan, warna, tata letak, dan keberfungsian objek terhadap materi. Indikator kelayakan bahasa adalah kesesuaian gaya bahasa yang digunakan dengan siswa, penggunaan redaksi dalam media pembelajaran, pemilihan kata dalam bahan ajar Indikator untuk konten materi adalah aspek pendahuluan, isi, evaluasi, dan penutup.

Tahap Evaluasi

Tahap evaluasi melakukan pelaksanaan uji coba prototipe serta perbaikan berdasarkan masukan yang telah diperoleh, penilaian dilakukan dengan cara evaluasi formatif yaitu *self evaluation*, *expert review*, *one-to-one evaluation,* dan *small goup evaluation.*

Pada tahap *self evaluation* penilaian dilakukan oleh peneliti sendiri terhadap produk berupa media interaktif dalam pengenalan kata bermakna yang telah dikembangkan. Disini peneliti mengevaluasi sendiri media pembelajaran, untuk mengecek kembali apakah rumusan dan penjabaran materi serta evaluasi belajar telah benar dan tepat, proporsional desain tata letaknya dan apakah isi materinya sesuai untuk memotivasi belajar mandiri.

Multimedia interaktif yang dikembangkan atas dasar *self evaluation*, diberikan kepada para ahli agar dapat divalidasi. Pada tahap ini, validator melihat dan mengevaluasi desain produk yang telah dibuat, selsanjutnys dilskuksn penyempurnaan.

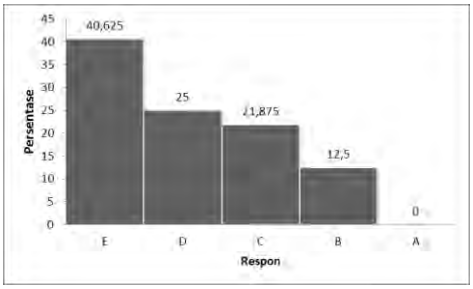
Selanjutnya multimedia diuji cobakan pada kelas kecil dan kelas besar untuk melihat keterbacaan dan efektifitasnya. Responden akan diobeservasi dan diminta pendapatnya terkait kebahasaan, tampilan, materi, dan motivasi belajar mandirinya. Multimedia interaktif akan direvisi sesuai masukan responden. Baik pada ijicoba kelas besar maupun uji coba kelas kecil.

Data dari hasil validasi oleh ahli kemudian didiskusikan dengan ahli itu sendiri untuk mendapatkan kejelasan informasi hasil validasi produk, sehingga peneliti bisa menggunakan data hasil validasi tersebut sebagai acuan untuk merevisi produk/prototipe sampai dinyatakan layak untuk diujicobakan. Dalam media interaktif dalam pengenalan kata bermakna proses validasi ahli meliputi validasi materi, bahasa, dan media.

Observasi sebagai suatu kegiatan yang dilakukan peneliti untuk mencatat perkembangan bahas peserta didik dengan bantuan instrumen-instrumen Pada penelitian ini, untuk mendapatkan data observasi dilakukan dengan cara melihat dan menilai secara langsung aktivitas dan tingkah laku anak selama proses pembelajaran

HASIL

Analisis kebutuhan multimedia melibatkan guru, siswa dan pengembang teknologi pembelajaran. Dalam realisasinya, informasi digali langsung dari responden yang terlibat. Berikut ini adalah hasilnya.

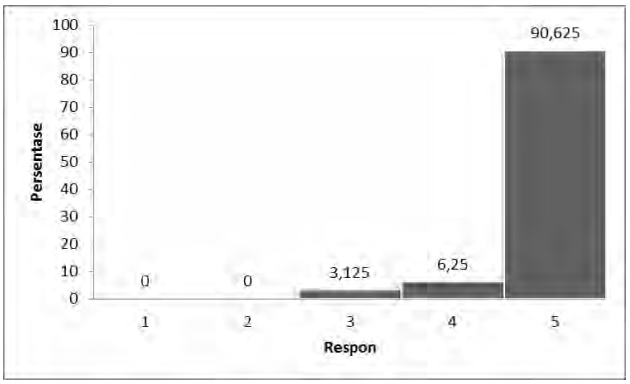


Gambar 1 Media Pembelajaran Berbasis TI yang digunakan

Gambar 1 menunjukkan bahwa mayoritas siswa menyatakan bahwa kurangnya media berbasis Teknologi Informatika yang digunakan guru selama ini. Terdapat 40,625% pernyataan siswa dalam katagori Kurang (E). Demikian juga untuk survei motivasi belajar saat media pembelajaran selama ini digunakan, siswa terdapat 50% siswa dalam katagori tidak termotivasi belajar, 21,875% siswa kurang termotivasi, 18,75 cukup termotivasi, 9,37% termotivasi, dan tidak ada siswa yang sangat termotivasi. Menunjukkan bahwa motivasi siswa masih rendah dengan media pembelajaran yang dterapkan selama ini.

Saat ditanya sejah mana mengenal multimedia interaktif, 43,75 % menyatakan sangat tidak mengenal, 18,75% tidak mengenal, 37,5 % kurang mengenal, dan belum ada yang mengenal karena belum pernah diterapkan di kelas.

Gambar 2 berikut ini menunjukkan ketertarikan siswa dan guru terhadap penerapan multimedia interaktif.



Gambar 2 Ketertarikan Siswa dengan Multimedia Interaktif

Gambar 2 menunjukkan 90,625% menyatakan sanagat tertarik, 6,25% tertarik, 3,125% kurang tertarik, dan tidak ada yang tidak tertarik. Sehingga sangat perlu dilakukan pengembangan multimedia interaktif pada pembelajaran matematika.

Berikutnya adalah mendesain bahan ajar yang akan dikembangkan, diawali dengan penentuan materi (bab). Pada saat penentuan materi dipilih materi yang tahun sebelumnya nilai masih rendah atau daya serap materi masih rendah. Karena nilai tahun lalu nilai himpunan yang paling rendah, maka dipilih materi himpunan.

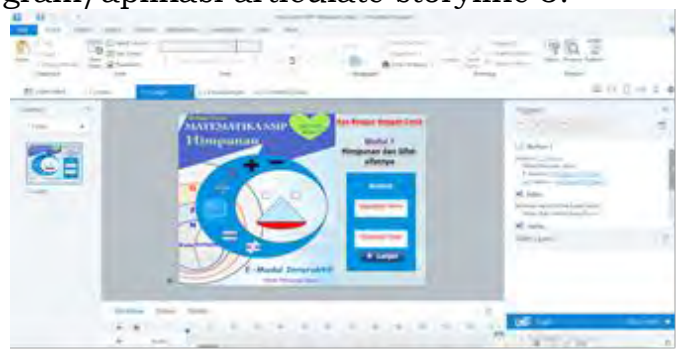
Pada materi himpunan KD yang akan digunakan terkait materi himpunan.

Tabel 1 Kompetensi Dasar dan Indek Pencapaian Materi Himpunan

KD	IPK
3.4 siswa mampu menjelaskan dan	3.4.1 Siswa mampu menjelaskan

	menyatakan himpunan, himpunan bagian, himpunan semesta, himpunan kosong, komplemen himpunan menggunakan masalah kontekstual	himpunan, himpunan bagian, himpunan semesta, himpunan kosong, komplemen himpunan menggunakan masalah kontekstual.
		3.4.2 Siswa mampu menyatakan himpunan, himpunan bagian, himpunan semesta, himpunan kosong, komplemen himpunan menggunakan masalah kontekstual
4.4	Menyelesaikan masalah konstekstual yang berkaitan dengan himpunan, himpunan bagian, himpunan semesta, himpunan kosong, komplemen himpunan, dan operasi pada himpunan untuk menyajikan masalah kontekstual	4.4.1 Siswa mampu menyelesaikan masalah konstekstual yang berkaitan dengan himpunan, himpunan bagian, himpunan semesta, himpunan kosong, komplemen himpunan, dan operasi pada himpunan untuk menyajikan masalah kontekstual

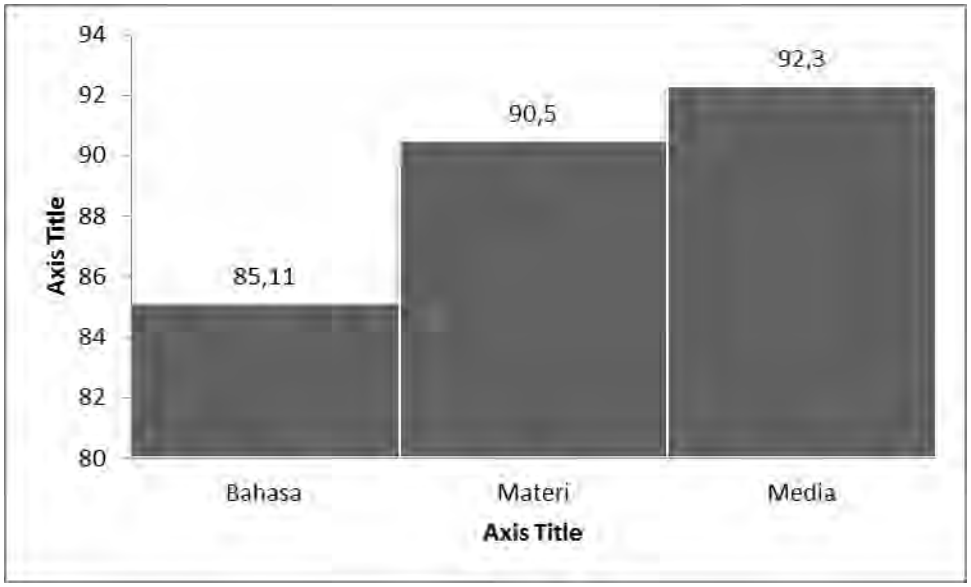
Pengembangannya dilakukan dengan menggunakan aplikasi articulate storyline 3. Tahapan awal dengan merancang materi di Microsoft Power poin, karena materi yang sudah dibuar dalam MS powerpoin dapat langsung di input dalam program/aplikasi articulate storyline 3.



Gambar 3 Bahan Ajar Matematika Materi Himpunan Articulate Storyline

Pengembangan media ini dibagi dalam 6 Scane yaitu: Pembuka (Cover dan Login), Pendahuluan, Materi, Latihan, Ringkasan, dan Evaluasi.

Validasi multimedia menggunakan ahli media , ahli konten materi, dan ahli bahasa dengan menggunakan instrumen yang telah di susun.



Gambar 4 Hasil Validasi Media

Gambar 4 menunjukkan hasil validasi dari 3 orang ahli untuk masing-masing Aspel (bahasa, materi, dan media) dengan hasil capaian di atas 85% dengan katagori sangat baik.

Implementasi pengembangan dilakukan dengan menguji cobakan multimedia sebanyak 2 kali, yaitu ujicoba kelas kecil dan ujicoba kelas besar.

Uji coba kelas kecil dilakukan pada 10 orang anak. Dan uji coba kelas besar diujicobakan 32 anak (satu kelas). Ujicoba ini dilakukan untuk penyempurnaan media agar lebih baik lagi. Masukan tersebut berupa (1) untuk bahasa agar lebih komunikatif, misalnya ada beberapa kata yang keterbacaannya masih membingungkan, ada beberapa simbol yang kurang jelas. (2)untuk materi yang disampaikan sudah tepat, namun perlu diperkaya dengan soal-soal yang terkait dengan objek berbasis kedaerahan bengkulu. (3) untuk tampilan medianya diperlukan objek yang pewarnaanya lebih menarik dan beberapa video yang durasinya perlu diperpendek dengan memotong bagian yang tidak penting.

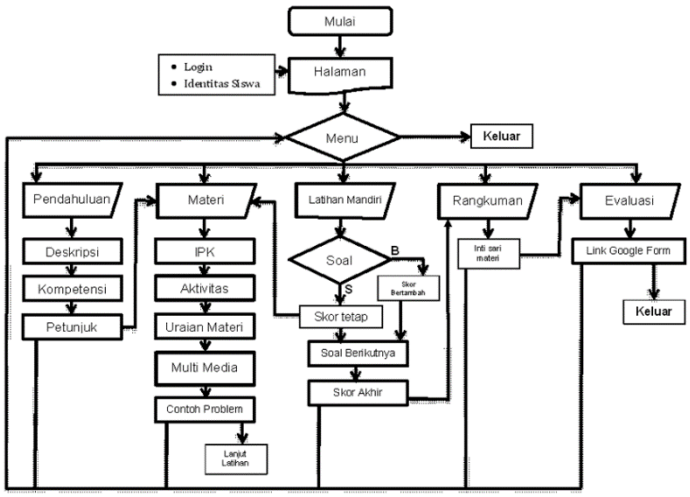
Tahap evaluasi merupakan tahap penilaian terhadap bahan ajar matematika yang dikembangkan. Penilaian dilakukan dengan melihat komponen kelayakan isi, penyajian, bahasa, dan kegrafikan bahan ajar yang dikembangkan. Di samping itu, pada tahap ini dilakukan tes kemampuan pemecahan masalah pada siswa. Tes ini dilakukan untuk melihat efektivitas bahan ajar matematika yang dikembangkan dalam memfasilitasi kemampuan pemecahan masalah matematis siswa.

DISKUSI DAN KESIMPULAN

Dari hasil analisis yang diperoleh menunjukkan bahwa pengembangan multimedia interaktif sangat diperlukan dalam pembelajaran matematika terlebih pada pembelajaran masa pandemi. Hal ini terbukti dari 90% lebih responden menyatakan sangat tertarik dengan multimedia interaktif articulate storyline.

Bedasarkan pemilihan materi yang sudah ditetapkan, dirancang desain alur

komponen yang ada pada multimedia interaktif.



Gambar 4 Desain Alur Bahan Ajar Matematika Materi Himpunan Articulate Storyline

Dari analisis yang dilakukan dibuatlah desain pembelajaran dengan multimedia interaktif materi himpunan. Pendekatan yang dibangun adalah kemandirian belajar.

Pengembangan yang dipandang tepat adalah dengan menggunakan aplikasi articulate storyline 3 karena dipandang mudah dikembangkan dengan file dasar yang digunakan adalah power point yang sudah familiar bagi guru SMP.

Untuk meningkatkan kemandirian belajar materi dirancang seperti game, siswa bisa berinteraksi secara interaktif dengan multimedia. Sehingga siswa dapat terpacu kemandirian belajarnya.

Hasil validasi ahli media, materi, dan bahasa menunjukkan bahwa multimedia yang dikembangkan dipandang layak untuk digunakan dalam pembelajaran matematika. Masukan yang sudah didapatkan dari ujicoba kelas kecil dan besar digunakan untuk penyempurnaan produk. Perbaikan bahsa agar lebih komunikatif berupa penyempurnaan kalimat yang masih membingungkandan perbaikan beberapa simbol yang kurang jelas. Penambahan soal-soal terkait dengan objek berbasis kedaerahan bengkulu, misalnya untuk himpunan diganti dengan objek wisata yang ada di Kota Bengkulu dan beberapa benda/aktifitas di sekitar Kota Bengkulu. Juga sudah dilakukan penyempurnaan tampilan pewarnaan dan pengeditan beberapa video.

Dari hasil uji coba diperoleh masukan-masukan, kemudian dilakukan berbagai penyempurnaan. Diantaranya terkait dengan beberapa trigger yang kurang berfungsi dan beberapa perubahan tampilan.

Dari evaluasi yang dilakukan setelah implementasi di kelas, menunjukkan ketuntasan secara klasikal terjadi peningkatan.

Simpulan

Dari diskusi yang sudah dilakukan dapat disimpulkan bahwa pengembangan multimedia interaktif sangat diperlukan, lebih dari 90% responden menyatakan tertarik penggunaaan multimedia interaktif. Desain yang dirancang mulai dari pendahuluan, materi, latihan, rangkuman dan evaluasi. Hasil validasi ahli menunjukan bahwa bahasa , materi, dan media yang dibuat sangat layak untuk digunakan pada mata pelajaran matematika

SMP kelas 7 dengan skor masing-masing 85 untuk bahasa, 90 untuk materi, dan 92 untuk media. Masukan yang sudah didapatkan dari ujicoba kelas kecil dan besar digunakan untuk penyempurnaan produk. Perbaikan bahsa agar lebih komunikatif berupa penyempurnaan kalimat yang masih membingungkandan perbaikan beberapa simbol yang kurang jelas. Penambahan soal-soal terkait dengan objek berbasis kedaerahan bengkulu, misalnya untuk himpunan diganti dengan objek wisata yang ada di Kota Bengkulu dan beberapa benda/aktifitas di sekitar Kota Bengkulu. Juga sudah dilakukan penyempurnaan tampilan pewarnaan dan pengeditan beberapa video

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INFORMATION AND COMMUNICATION TECHNOLOGY IN ONLINE LEARNING AMİD COVID-19 PANDEMIC

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Abstract. The purpose of this study was to determine the role of information and communication technology in online learning. The research method used is qualitative to reveal and understand the realities in the field. The data collection technique used is a questionnaire, namely a conventional questionnaire (printed) and in online form, namely in the form of a google form. By using the Self-Administered Questionnaire technique, data collection techniques by submitting or sending a list of questions to be filled out by the respondents themselves. The results showed that the use of several digital media and platforms such as WhatsApp (92.6%), Google Classroom (22.2%), and Youtube (3.7%) were the alternative choices for educators and students. The role of information and communication technology in online learning as a learning aid (58.3%), as an online learning medium (33.3%), and as a source of teaching materials (20.8%).

Keywords : Information technology, platform

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INTRODUCTION

The occurrence of the COVID-19 pandemic has forced the government to make various policies in various sectors, one of which is in the education sector. The government's policy is in the form of implementing online learning as an effort to break the chain of the spread of Covid-19 in the community, especially in schools. This policy imposes social distancing in learning between teachers and students, which was originally a face-to-face learning process and is now an online-based learning.

Learning that is done online certainly has its own impact on education actors, such as educators, students, institutions and even provides challenges for the wider community, especially parents. In practice, educators must find ways to continue to deliver learning materials that can be easily accepted by students. Likewise, students are required to be able to adapt to situations and conditions like today, one of which is mental readiness. Therefore, learning which is usually carried out face-to-face in a room

equipped with existing facilities must be carried out at a distance and through learning technology media, this is in accordance with the role of technology in education which shows that educational technology plays a very important role in improving the quality of education. . In addition, the role of technology can increase the effectiveness and efficiency of the teaching and learning process so that it can make it easier to achieve educational goals (Andri and Meri 2020).

In this study, the role discussed is the role of information and communication technology in online learning. Along with the times, technology is growing, so that it has an impact on the progress of the learning media used today, although with different names. Information technology is a solution for learning that is done today. Advances in information and communication technology are increasingly supporting the online learning process with the presence of various media and online learning platforms that are able to support learning facilities from home (Wilson 2020). Each platform used certainly has its advantages and disadvantages when used for the learning process.

METHOD

The research method used in this study is a qualitative research method. The research method is basically a scientific way to get data with certain goals and uses (Sugiyono 2018). Qualitative method as a research procedure that produces descriptive data in the form of written or spoken words from people and observed behavior (Literate and Indonesia 2020). Qualitative methods are used to obtain in-depth data, a data that contains meaning. Meaning is actual data, definite data which is a value behind visible data (Sugiyono 2015). Collecting data in the field using a questionnaire. The questionnaire that the researcher made is a questionnaire in conventional form (printed) or in online form, namely in the form of a google form. Google forms are a medium for getting quick answers (Yuliyanti, Hobri, and Suharto 2017). Using the Self-Administered Questionnaire technique is a data collection technique by submitting or sending a list of questions to be filled out by the respondents themselves (Pulungan 2017).Research respondents are elementary school students as a sample. In order to find out how the role of the use of information and communication technology in online learning in the midst of the Covid-19 pandemic and data collection is considered more efficient. The process of distributing questionnaires is carried out by giving questionnaires to respondents in the form of Google Forms because they are considered in accordance with the current pandemic conditions.

RESULT AND DISCUSSION

Result

1. Sample Characteristics

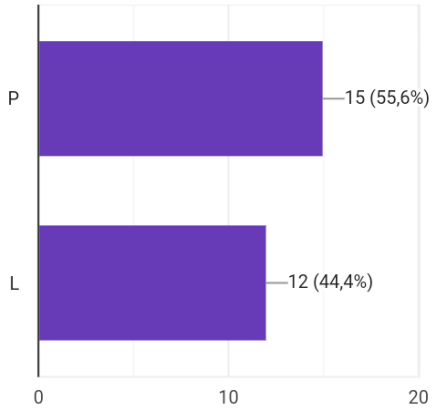

Figure 1. Gender

The number of samples that became respondents in this study were 27 elementary school students consisting of 55.6% female and 44.4% male. (See Figure 1). Respondents are students and elementary school students in Pamekasan.

a. Overview of Information and Communication Technology Online Learninga. Information and Communication Technology as an Online Learning Media (Application) Used by Students

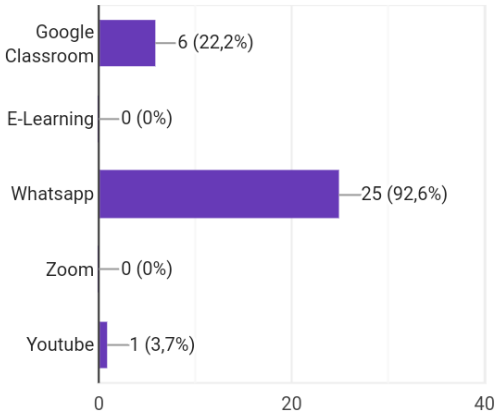

Figure 2. Media (Application) of Online Learning

From the results of research through Google Forms, it is shown that in elementary schools, online learning is carried out using information and communication technology as a medium (application) for learning. This is intended so that learning continues to be carried out with the existence of tools to convey learning between educators and students remotely. The online learning media (applications) that are more frequently used by students are WhatsApp (92.6%), Google Classroom (22.2%), and Youtube (3.7%). They like the media because it is

considered easy and practical to use. In addition, because it does not spend too much internet quota.

b. Constraints Faced by Students when Learning Online Using Information and Communication Technology

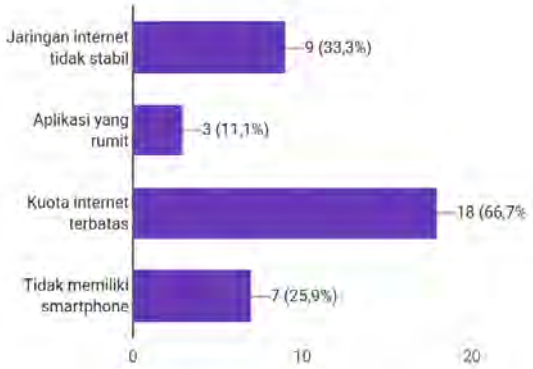

Figure 3. Online Learning Constraints

Information and communication technology is really needed in online learning. Therefore, students must have a smartphone and know how to use it. The characteristics of this learning always use and utilize the internet network. So if there is no internet quota and the internet network is unstable, it will become an obstacle for online learning. It can be seen from the results of this study that the obstacles faced by students during online learning, namely unstable internet network (33.3%), complicated applications (11.1%), limited internet quota (66.7%), and not having a smartphone. (25.9%).(See Figure 3).

c. The Role of Information and Communication Technology (Applications) in Online Learning

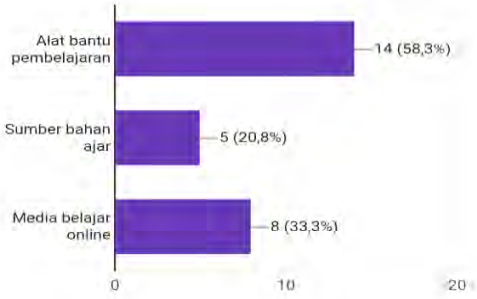

Figure 4. The Role (Application) of Online Learning

From the research results, information and communication technology plays a very important role in online learning. The role of information and communication technology in online learning as a learning aid (58.3%), as an online learning medium (33.3%), and as a source of teaching materials (20.8%). (See Figure 4)

DISCUSSION

Understanding Information and Communication Technology

According to Martin (1999), information technology is not only limited to computer technology (hardware and software) that will be used to process and store information, but also includes communication technology to send/disseminate information. Based on the two definitions above, it can be concluded that information technology can simply be viewed as the science needed to manage information so that information can be easily searched or recovered. Meanwhile, in its implementation to be able to manage this information properly, quickly, and effectively, computer technology is needed as an information processor and communication technology as a remote information transmitter (Andri 2017). Meanwhile, communication technology is technology related to long-distance communication devices, such as telephone, fax, and television.

Therefore, information and communication technology is an inseparable part of education, so the development of information and communication technology has a role in providing direction for the development of the world of education. Information and communication technology as a means of supporting distance learning is marked by the emergence of various online learning, using internet facilities, both in formal and non-formal education. This provides an opportunity for anyone to take part in various levels of education that can be carried out anywhere and anytime. So that the communication and information technology that is currently developing can be an alternative choice as a medium or tool used during the Covid-19 pandemic so that education can continue. With the help of information and communication technology, it is possible to carry out learning with an online systemor distance learning (PJJ).

Online Learning

A separate challenge for the world of education so that learning can continue in the midst of this COVID-19 pandemic. One way out to deal with this problem is online learning. Online is another word in the network, according to the Central Indonesian Dictionary (KBBI), which means connected through computer networks, the internet, and so on. Online learning is learning that is carried out remotely with the help of the internet. In online learning, facilities and infrastructure are needed, in the form of laptops, computers, smartphones, and internet network assistance. Online learning is a form of distance learning that utilizes information and communication technology such as the internet.

This online learning is carried out because it is based on the description of the problems stated earlier that the Covid-19 Pandemic has hampered all human activities, including theeducation. This learning is very different from conventional learning that occurs in schools. Teachers and students do not face to face, but occur remotely which allows teachers and students to be in different places. However, online learning prioritizes interaction and providing information that makes it easier for students to improve the quality of learning. Positively, this learning is also very helpful for the continuity of

learning during this pandemic. Online learning is implemented to reduce and break the chain of the spread of Covid-19 in the school environment.

Online learning is carried out by utilizing internet technology with a distance learning system, so that learning and teaching activities (KBM) are not carried out face-to-face. During the current pandemic, online learning is not only carried out at high and secondary level education, but also at basic level education due to restrictions on schools with a face-to-face system (Sodiq, Mahfud, and Adi 2021). Online learning is a learning system. whose implementation is not carried out directly in the same place, but is carried out by utilizing a platform that can assist the teaching and learning process even though it is carried out remotely (Handarini and Wulandari 2020).

The online learning process is carried out with two models, namely one-way and two-way. One-way online learning here is carried out when the teacher gives assignments or materials through online media then students actively and independently study the material and do the assigned tasks. Meanwhile, two-way online learning is carried out when teachers and students are in a virtual space that is intentionally provided for the interaction process between teachers and students. This interaction process can be in the form of delivering material, explaining assignments that can be directly followed by students and teachers.

The Role of Information and Communication Technology in Online Learning

Besides that, the role of information and communication technology is very important in the learning process, especially during a pandemic like today. The emergence of Covid-19 requires that all activities be carried out at home, including teaching and learning activities. Advances in information and communication technology are increasingly supporting the online learning process with the existence of online learning applications and platforms. Thus, information and communication technology plays an important role in helping the online learning process. In other words, technology acts as a medium for interaction and transfer of information related to learning in the implementation of online learning.

Information and communication technology is needed to support the implementation of online learning. The role of information and communication technology in online learning is very numerous, one of which is as a teacher's media to provide material and give assignments to students. This opinion is in accordance with the opinion of Hendratno (2018) the role of information and communication technology in learning, especially online learning is "as a learning infrastructure, as a source of teaching materials, as learning aids and facilities, as skills and competencies, as a source of research information, as a consultation medium. , as an online learning medium" (Yuliyanti et al. 2017).

Online learning requires media or educational aids that allow you to use internet access and good information technology to facilitate the formation of learning processes and knowledge through interactions. Information and communication technology that is widely used in the world of education, especially in online learning, functions as a learning tool and facility, as an

online learning medium between educators and students, namely the use of digital platforms.

The following are some digital platforms that are alternative choices as learning media or learning aids during online learning:

Google Classroom

Google Classroom is an application that aims to make it easier for teachers and students to carry out learning. This Google Classroom helps teachers easily manage learning and convey information precisely and accurately to students. In online learning, teachers can take advantage of various features available in Google Classroom such as assignments, grading, communication, time-cost, archive course, mobile application, and privacy. Gmail, Youtube, Google Drive, Google Maps, and Google Translate are supporting features on the Google Classroom platform.

E-Learning

E-learning is a form of media or learning platform that is supported by the use of information and communication technology. E-learning as the use of electronic technology to deliver, support, and improve teaching, learning, and assessment during the learning process.

Whatsapp

WhatsApp is a platform that is widely used today for both personal and social purposes. This platform is a tool used to carry out long-distance communication in the form of conversations using writing, images, sound or video. Teachers can send various things such as materials, evaluation questions, and explanations via video or voice notes. Whatsapp groups are also able to facilitate two-way learning through video call services. Through this service, students and teachers can meet face-to-face in the process of delivering material and delivering assignments, even with a limited number of students.

Zoom

Zoom is a meeting application with video and screen sharing with the number of participants up to 100 members and even up to 1000 more who can join in this application. However, this application is very helpful for teachers who want to have direct discussions using virtual rooms with students because they have a large enough space capacity in one meeting (ZAM 2021).

CONCLUSION

The COVID-19 pandemic has had an impact on the world of education. Learning that was originally done face-to-face must be changed to distance learning between educators and students. Online learning requires the use of communication and information technology. Advances in information and communication technology are very helpful for the success of online learning with the existence of digital media and platforms such as WhatsApp, Google Classroom, and Youtube which are alternative choices for educators and students. The media (application) must of course use internet access to run

it. Information and communication technology plays an important role in online learning. The role of information and communication technology in online learning as a learning aid, as an online learning medium, and as a source of teaching materials. That way, between educators and students can still carry out learning well.

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اللغة العربية الاستقبالية في المدارس الثنائية: مراجعة الأساليب والاستراتيجيات

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Abstract

This study aims to determine the implementation of methods and strategies in learning Arabic receptive skills for Madrasah Tsanawiyah. The method used is the library research method, while data collection is done by examining and exploring a number of journal articles, books, and several data sources or other information deemed relevant to the study. The results of this study are learning using Arabic language learning methods and strategies is one alternative for teachers in teaching Arabic receptive skills. In learning listening skills (mahara al-istima ') students are able to understand the contents of what has been listened to and expressed again through the language both verbally and in writing. As for learning reading skills (maharah al-qiroah) students are able to read Arabic texts fluently, able to translate and be able to understand them well and fluently.

Keywords: Learning Methods, Learning Strategies, Receptive Language Skills

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الملاخص

تهدف هذه الدراسة إلى تحديد تنفيذ الأساليب والاستراتيجيات في تعلم مهارات اللغة العربية الاستقبلية لمدرسة التسناوية. الطريقة المستخدمة هي طريقة البحث في المكتبة ، بينما يتم جمع البيانات عن طريق فحص واستكشاف عدد من مقالات المجلات والكتب والعديد من مصادر البيانات أو المعلومات الأخرى التي تعتبر ذات صلة بالدراسة. نتائج هذه الدراسة هي التعلم باستخدام أساليب واستراتيجيات تعلم اللغة العربية هي أحد البدائل للمعلمين في تدريس مهارات تقبّل اللغة العربية. في تعلم مهارات الاستماع (مهارة الاستماع) ، يستطيع الطلاب فهم محتويات ما تم الاستماع إليه والتعبير عنه مرة أخرى من خلال اللغة شفهيًا وكتابيًا. أما بالنسبة لتعلم مهارات القراءة (مهارة القرع) ، فإن الطلاب قادرون على قراءة النصوص العربية بطلاقة ، والقدرة على الترجمة والقدرة على فهمها جيدًا وطلاقة.

الكلمات المفتاحية: طرق التعلم ، استراتيجيات التعلم ، مهارات الاستيعاب اللغوي

المقدمة

تلعب اللغة دورًا مهمًا في الحياة. إحدى وظائف اللغة هي كونها أداة اتصال. يمكن أن يكون الاتصال مباشرًا أو لفظيًا مثل الاستماع والتحدث ، كما يمكن أن يكون التواصل غير مباشر مثل القراءة والكتابة.(Henry Guntur Tarigan, 1990) لذلك يجب تعليم اللغة للطلاب ، ويجب أن يتحقق ذلك حقًا ، وخاصة المعلمين بشكل عام والمعلمين في مجال الدراسة بشكل خاص. بمعنى آخر ، بحيث يتمتع الطلاب بكفاءة لغوية جيدة. إذا كان شخص ما يتمتع بكفاءة لغوية جيدة ، فمن المتوقع أن يكون قادرًا على التواصل جيدًا وطلاقة ، سواء شفهيًا أو كتابيًا.(Mustofa, 2011) لذلك ، من الواضح أن تعلم اللغة يتطلب الكفاءة اللغوية ، أو بعبارة أخرى يجب على الطلاب إتقان المهارات اللغوية.

في تعلم اللغة العربية ، هناك أربع مهارات لغوية يجب أن يمتلكها الطلاب ، وهي مهارات الاستماع (مهارة القلم) ومهارات القراءة (مهرة القرعة) ومهارات الكتابة (مهرة الكتاب) ، في إتقان هذه المهارات 4. بصفتنا لغوي ، فإننا نفترض أن قدرة الشخص اللغوية يتم تحديدها فقط من

خلال مستوى إتقان المفردات. هذا بالتأكيد وثيق الصلة بالمهارات اللغوية كأداة اتصال ، يجب عليك أولاً إتقان المفردات أو المفرودات. لن يتم فصل كل تعلم للغة العربية عن الاستراتيجية والأساليب الإعلامية.

كواحدة من مهارات الاستيعاب ، تعد مهارات الاستماع عنصرًا يجب أن يتقنه الطلاب أولاً. من الطبيعي أن يفهم البشر لغة الآخرين أولاً من خلال السمع ، لذلك في ضوء هذا المفهوم ، فإن مهارة اللغة الأجنبية التي يجب أن تكون لها الأسبقية هي الاستماع. بينما القراءة هي القدرة على الفهم التي تتطور في مرحلة لاحقة.(Hermawan, 2011)

كإحدى مهارات الاستيعاب ، تعد مهارات الاستماع عنصرًا يجب أن يتقنه الطلاب أولاً. من الطبيعي أن يفهم البشر لغة الآخرين أولاً من خلال السمع ، لذلك في ضوء هذا المفهوم ، فإن مهارة اللغة الأجنبية التي يجب أن تكون لها الأسبقية هي الاستماع. في الوقت نفسه ، القراءة هي قدرة على الفهم تتطور في مرحلة لاحقة. في جوهرها ، يعد تعلم مهارة الاستقامة مفيدًا جدًا للطلاب الذين لا يزالون في مرحلة المبتدئين في تعلم اللغة العربية ، لأن أنشطة تعلم اللغة العربية نفسها هي الخط الأول في إتقان اللغة العربية في الواقع ، في أنشطة التدريس والتعلم في الفصل ، لا تزال مهارة الاستقامة مستبعدة في التعلم. لذلك لا يكفي أن التعلم لا يزال يستخدم الأساليب الكلاسيكية مثل الأساليب المباشرة والمحاضرات وما إلى ذلك. يجب أن يكون هناك تحديث ، خاصة طريقة نقل المواد بشكل جيد.(Hermawan, 2011)

ترتبط مهارات القراءة ، التي تسمى باللغة العربية مهارة القرع ، بجانبين ، وهما القدرة على تغيير الرموز المكتوبة إلى أصوات والتقاط معاني جميع المواقف التي يرمز إليها بهذه الرموز المكتوبة والصوتية. يكمن جوهر مهارات القراءة في الجانب الثاني. ومع ذلك ، هذا لا يعني أن الكفاءة في الجانب الأول ليست مهمة. لأن الكفاءة في الجانب الأول تكمن وراء الجانب الثاني.(Effendy, 2012) مهارات القراءة باللغة العربية هي المهارات التي يجب أن يمتلكها الطلاب من أجل تطوير مهارات اللغة الأجنبية ، وتحديداً اللغة العربية. الغرض من تدريس القراءة ، كما هو معروف ، هو تدريب الطلاب على أن يكونوا ماهرين في فهم القراءة وتنمية مهارات القراءة لديهم. يجب أن تكون الطريقة المستخدمة قادرة على جعل الطلاب مهتمين وسعداء بعملية التعلم.

ومن هنا ظهرت عدة مشاكل نتيجة لذلك ، منها: عدم إعجاب الطلاب بدروس اللغة العربية لأن التعلم كان مملًا ورتيبًا ، ووجد الطلاب صعوبة في تعلم اللغة العربية ، وخاصة قراءة اللغة العربية.

مناهج البحث العلمي

تمت كتابة هذه المقالة باستخدام طريقة البحث في المكتبة. البيانات المستخدمة كمصدر للكتابة هي في شكل كتب ومقالات والعديد من مصادر البيانات أو المعلومات الأخرى التي تعتبر ذات صلة بالدراسة. وفي الوقت نفسه ، في تحليل البيانات ، يستخدم الكاتب طريقة التحليل الوصفي.

أ. تعريف الطريقة

في الواقع ، الطريقة عبارة عن مجموعة من الأساليب التي يستخدمها المعلم في نقل المعرفة أو نقل المعرفة إلى طلابه والتي تتم في عملية التعلم والتدريس أو عملية التعلم. من هذا التعبير ، يمكن استخلاص استنتاج عام ، أي عندما يتقن المعلم بشكل متزايد طريقة التعلم ، فكلما كان استخدام هذه الطريقة أفضل ، كانت النقاط التي يتقنها إتقانها جيدة ، وكلما كانت أهداف التعلم أفضل.(Nuha, 2012) لذلك من خلال إتقان طريقة التعلم ، سيكون المعلم أكثر مهارة في التكيف مع مواد التعلم النقطية بحيث يسهل عليه اختيار الوسائط وتطبيقها في عملية التعلم. من الواضح أنه إذا أتقن المعلم الطريقة ، فيمكنه اختيار طريقة جيدة مناسبة ومتوافقة مع المواد التعليمية والمواد التعليمية وحالات الطلاب وظروفهم بالإضافة إلى وسائط التعلم.

ب. فهم الاستراتيجية

استراتيجيات التعلم هي الطرق التي سيستخدمها المعلمون لاختيار أنشطة التعلم التي سيتم استخدامها أثناء عملية التعلم. يتم الاختيار من خلال النظر في الوضع والظروف الحالية ، ومصادر التعلم ، واحتياجات الطلاب وخصائص الطلاب التي يواجهونها من أجل تحقيق أهداف التعلم. في حين أن استراتيجية التعلم أو تسمى أسلوب التدريس هي العملية التشغيلية للطريقة.(Sumardi, 1974) لذلك ، تكون تقنيات التدريس في شكل خطط وقواعد وخطوات ومرافق يتم لعبها عمليًا في عملية التدريس والتعلم في الفصل من أجل تحقيق أهداف التعلم وتحقيقها.(Hamid, 2008)

ج. مهارات اللغة الاستيعابية

كلمة متقبل لها معنى إرادة (يمكن) قبول ؛ الانفتاح والاستجابة لآراء واقتراحات واقتراحات الآخرين ؛ القبول 1. في حين أن كلمة تقبلي إذا ارتبطت باللغة تعني أن متعلم اللغة لديه قدرات تقبيلية. المهارات الاستيعابية هي مهارات لغوية تُستخدم لالتقاط وفهم المعلومات التي ينقلها الآخرون من خلال اللغة المنطوقة والمكتوبة. في اللغة العربية ، تشمل مهارات اللغة الاستيعابية الاستماع (مهرة الاستماع) والقراءة (مهرة القرعة).

1. مهرات الإستماع

مهارة الاستماع هي مهارة الاستماع إلى اللغة المنطوقة باهتمام وفهم وتقدير كاملين. هذه المهارة هي أول نشاط يقوم به الإنسان في جميع اللغات لاكتساب المهارات اللغوية. قبل أن يكتسب الأطفال الصغار مهارات التحدث بلغة معينة ، يبدأون في عملية اكتساب المهارات اللغوية من خلال الاستماع ؛ استمع لمحادثات الناس من حوله. من هذه العملية يكتسب مهارة اللغة التالية ، وهي التحدث.(miftachul Taubah dan Ilzam dhaifi, 2020)

الاستماع (الاستماع) هو المهارة اللغوية الأولى التي يقوم بها شخص ما بدأ في تعلم لغة معينة ، سواء كان ذلك من قبل طفل بدأ للتو في التحدث أو شخص بالغ يتعلم لغة الآخرين. من خلال عملية الاستماع ، سيتمكن الشخص من قياس مستوى الصعوبة في تعلم اللغة لأنه من هناك يمكن فهم اللهجة ونمط النطق وهيكل اللغة وما إلى ذلك.

وفقًا لديفيد نونان في كتابه "منهجية تدريس اللغة" ، يقول أن اللغة موجودة لتحقيق أغراض الاتصال والوظيفية. تنعكس هذه الأهداف في اللغة نفسها. وبالتالي ، إذا تم وضع سياق اللغة المستخدمة بهدف اللغة ، فسوف يلعب دورًا مهمًا في تكوين اللغة نفسها.(Aziz, 1996)

تشمل أهداف تعلم الاستماع باللغة العربية ما يلي:

1. يستطيع التعرف على الأصوات في اللغة العربية وتمييزها
2. يمكن أن يميز النطق (علامات الترقيم) الذي يُقرأ مطولاً ويقرأ قصيرًا
3. قادرة على تمييز التشابه بين صوتين متطابقين تقريبًا
4. فهم العلاقة بين علامات الترقيم والكتابة
5. معرفة الكلمات التي هي تشديد (مكررة) ومكافأة
6. الاستماع وفهم كلمة أثناء التحدث
7. فهم معنى الكلمات نتيجة عملية الاستبدال والمعادلة في الكلمات العربية
8. يفهم استخدام الأزمنة في اللغة
9. فهم نمط استخدام الكلمات في اللغة العربية ، سواء كانت مستخدمة في ضمائر الذكر ، أو ضمائر المؤنث ، أو العد ، أو الوقت ، أو غير ذلك.

2. مهارات القراءة

توفر أنشطة القراءة مدخلات لغوية ، تمامًا مثل الاستماع. ومع ذلك ، فإن لها ميزة الاستماع من حيث إعطاء العنصر اللغوي بشكل أكثر دقة. بالإضافة إلى ذلك ، يتمتع القراء الجيدون بالاستقلالية ويمكنهم تنفيذ أنشطتهم الخاصة خارج الفصل الدراسي. يمكنهم أيضًا البقاء على اتصال باللغة الهدف من خلال المجلات أو الكتب أو الصحف باللغة الهدف.(Aziz, 1996) بهذه الطريقة ، سيكتسب المتعلمون مفردات وأشكال لغة إضافية بكميات كبيرة مفيدة جدًا في التفاعلات التواصلية.

وفي رأي جيريمي هارمر في كتابه ممارسة تعليم اللغة ، نقلاً عن فرقون ، قال إن هناك ست مهارات يجب التأكيد عليها في تعليم القراءة ، بما في ذلك المهارات التنبؤية ، والبحث عن معلومات معينة ، والحصول على صورة عامة ، والحصول على معلومات مفصلة ، والتعرف على الوظائف والوظائف. نمط الخطاب.

القراءة فعل يتم تنفيذه بناءً على تعاون عدة مهارات ، وهي الملاحظة والفهم والتفكير. تكون مهارات القراءة في شكل أنشطة للحصول على معنى من مجموعات مختلفة من الحروف. يبدأ هذا النشاط من التعرف على رموز الصوت (الحروف) والكلمات والتعبيرات والعبارات والجمل والخطابات وربطها بالأصوات ومعانيها. تدريجيًا ، تتطلب عملية اكتساب مهارات القراءة معرفة أدوات اللغة مثل أشوات ونحو وشرف وغيرها.

المهارات الدقيقة المتعلقة بعملية القراءة التي يجب أن يمتلكها القارئ هي:

أ. تعرف على نظام الكتابة المستخدم

ب. معرفة المفردات

ج. تحديد الكلمات الرئيسية التي تحدد الموضوع الرئيسي والفكرة

د. تحديد معاني الكلمات ، بما في ذلك تقسيم المفردات ، من السياق المكتوب

هـ. التعرف على فئات الكلمات النحوية: الأسماء والصفات وما إلى ذلك

و. تحديد المكونات في جملة ، مثل الموضوع والمسند والموضوع وحرف الجر

ز. التعرف على الأشكال الأساسية للنحو

ح. إعادة بناء واختتام الموقف والأهداف والمشاركين

ط. استخدام أدوات التماسك المعجمية والنحوية لاستخلاص النتائج

ي. استخدام المعارف والأدوات المعجمية والنحوية المتماسكة لفهم الموضوع الرئيسي أو المعلومات الرئيسية

ك. تمييز الفكرة الرئيسية عن التفاصيل المعروضة

ل. استخدام استراتيجيات قراءة مختلفة لأغراض القراءة المختلفة ، مثل البحث عن الأفكار الرئيسية أو إجراء دراسات متعمقة.(miftachul Taubah dan Ilzam dhaifi, 2020)

بناءً على المناقشة أعلاه ، يمكن الاستنتاج أن أحد المشاكل التي غالبًا ما توجد في عملية تدريس اللغات الأجنبية ، وخاصة اللغة العربية ، هو اختيار طرق التدريس. الطريقة هي طريقة يتم تمريرها لإيصال المادة الدراسية للطلاب ، بحيث يمكن تحقيق الأهداف التعليمية ، وطريقة القروية هي طريقة لعرض الدروس بالقراءة ، سواء القراءة بصوت عالٍ أو القراءة بصمت. باستخدام طريقة القرعة ، من المتوقع أن يحسن مهارات تقبُّل الطلاب ، مهارات الاستماع والقراءة. في مهارات الاستماع ، من المتوقع أن يكون الطلاب قادرين على فهم محتوى ما تم الاستماع إليه والتعبير عنه مرة أخرى من خلال اللغة ، شفهيًا وكتابيًا. أما بالنسبة لمهارات القراءة بهذه الطريقة ، فمن المأمول أن يتمكن الطلاب من نطق الكلمات والجمل العربية بطلاقة وطلاقة وصحيحة وفقًا لقواعد محددة مسبقًا. أساس أنشطة التعلم هو فهم محتوى القراءة ، مسبوقًا بإدخال المفردات الأساسية ومعناها ، ثم مناقشة محتويات القراءة بمساعدة المعلم. فهم محتوى القراءة من خلال عملية التحليل ، وليس عن طريق الترجمة الحرفية ، على الرغم من إمكانية استخدام اللغة الأم في مناقشة محتويات النص.

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HOW EFFECTIVE THE SPADA IS FOR FIRST-YEAR STUDENTS: LEARNING FROM BUSINESS ADMINISTRATION STUDENTS

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Abstract. In 2020, Padang State Polytechnic created an online learning program through the development of the SPADA (*Sistem Pembelajaran Dalam Jaringan*). SPADA of Department of Business Administration provides all necessary facilities in a single account, eliminating the need for additional applications. The purpose of this study is to determine the effectiveness of the SPADA as an online learning media among the first-year students 2020/2021 academic year of Business Administration Study Program Padang State Polytechnic. The quantitative research method was used, along with descriptive analysis. The online data collection method employed a questionnaire administered via Google Forms and based on the theory of Review Object Instrument (LORI-learning objective review instrument). This study utilized six indicators of learning objective review, those are: content quality, learning goal alignment, presentation design, interaction usability, accessibility, and motivation. The findings of this study show that each SPADA assessment indicator has a different average score, but it can be concluded that all of SPADA's facilities for supporting online learning for students are very effective.

Keywords: SPADA, LORI, Online learning

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INTRODUCTION

The COVID-19 pandemic began in Indonesia in early 2020. Even now, at the end of 2021, the virus pandemic coexists in the midst of Indonesian society in all aspects of life, including education. Through the Directorate of Higher Education Circular No. 1 Year 2020, the Ministry of Education, Culture, Research and Technology of Republic Indonesia (Kemendikbudristek) has issued a policy for the implementation of distance learning and advises students to learn from home (known as e-learning). Based on this situation, the Padang State Polytechnic issued a policy through the Circular Number: 1/PL9/HK/2020 in 2020 on the Follow-up of Preparedness to Face the COVID-19 Pandemic.

The COVID-19 pandemic has compelled the education institution to make a rapid transition from a face-to-face teachers and students learning system to distance learning that relies on technological sophistication. This distance learning strategy is considered the most qualified strategy to prevent the spread of COVID-19 (Mulyana et al, 2020).

Advanced technology makes use of the existing SPADA (Sistem Pembelajaran Dalam Jaringan - networked learning system) program developed by the Directorate General of Learning and Student Affairs (Kemendikbudristek). SPADA is essentially the establishment of a program for

developing and disseminating open learning, as well as organizing open online lectures and regular online lectures. SPADA involves at least 54 universities and 201 education institution partners (Belawarti and Nizam, 2020).

SPADA provides access to two-way communication between lecturers and students via video conference (vicon), which allows the lecture process to be face-to-face remotely with a relatively large number of participants, using the Zoom Cloud Meeting application, which is frequently used as a network meeting platform. Then, in the next step, students can download teaching material modules, presentation slides, scripts, and learning videos provided by the lecturer as an aid to the learning process and read them offline according to the class and the specified courses. This facility can be used instead of email, which is commonly used by lecturers to send lecture teaching materials.

Considering that the SPADA in Department of Business Administration was designed and implemented in 2020 and contains all of the facilities required in the teaching and learning process, research is needed to determine how relevant all of the SPADA facilities are and how effective all of the SPADA features are based on student perception. The purpose of this study is to assess the effectiveness of the SPADA application, which is used as the primary medium for online learning for the first year students in the Department of Business Administration Padang State Polytechnic 2020/2021 academic term.

In digital learning, the term e-learning has long been known and defined by scholars. According to Fathurrohman and Sulistyorini (2012), e-learning can be defined as a type of web-based learning that can be accessed via an intranet on a local network or the internet. Rigianti (2020) stated that online learning is a new breakthrough in the teaching and learning process which during its activities utilizes electronic devices. Similarly, Islami and Sholihudin (2020) stated that online learning is an internet-based learning technology, so the teaching and learning process can be done online. Finally, Supuwiningsih (2021) defined e-learning as the use of computer technology and computer networks in conjunction with the application of innovative learning models in the context of implementing learning activities that will provide students with external access to knowledge in order for them to acquire new skills. According to Supuwiningsih (2021), based on the ASTD definition, e-learning can be divided into three models, namely: web-based learning ,virtual education, and digital collaboration. The characteristics of e-learning are online, massive, and open (Bilfaqih and M. Nur, 2015).

Furthermore, e-learning, according to Rusli et al (2020), is learning through the use of information technology as a medium of communication between students. E-learning can be effective because it includes the following components: (1) technology, Technology, is a collection of scientific knowledge, machines, tools, and production organizational capabilities that are managed systematically and effectively, including: (Virtual Learning Environment/VLE), Learning Management System (LMS), Learning Content Management System (LCMS) and Virtual Classroom; authoring tools: Adobe Flash, Lectora, Articulate, and Adobe Captive; collaborative tool: wiki, blog, discussion forum and live chat, assessment tools: assessment technology/software assessment such as Adobe Captivate. Specialist

Software: simulation, game etc.; (2) Content or learning materials, which in e-learning as Learning Management System (LMS), Multimedia Based Content or Text-based Content; (3) Learning Design that is the process of determining the best learning methods to use in order to achieve the desired results.

Table 1. *The LORI 6 Indicators*

Indicator	
Content Quality	Accuracy, balanced presentation of ideas, appropriate level of detail, and reusability in varied contexts
Learning Goal Alignment	Alignment among learning goals, activities, assessments, and learner characteristics
Presentation Design	Design of visual and auditory information for enhanced learning and efficient mental processing
Interaction Usability	Ease of navigation, predictability of the user interface, and quality of the interface help features
Accessibility	Design of controls and presentation formats to accommodate disabled and mobile learners
Motivation	Ability to motivate and interest an identified population of learners

SPADA (Network Learning System), according to Ayu and Mohammad (2020), is a learning system that is flexible in its use, beginning with simple space and time settings, teaching materials, and learning processes that can be adapted to needs. Furthermore, according to Wibawanto (2017), SPADA or online learning system is a portal owned by the Kemendikbudristek to manage online learning organized by various universities in Indonesia.

The Learning Object Review Instrument was created by Nesbit, Belfer and Leacock (2009) to assess the quality of learning objects (LORI-learning objective review instrument). The LORI instruments are classified into six criteria that were used in this study (refer to Table 1.)

METHODS

The current study belongs to quantitative research based on positivism philosophy with descriptive method. Data was collected by means of Likert five-scale questionnaire which had been distributed online via google form during September 2021. Respondents are 104 out of 143 the first year students of Business Administration Department Padang State Polytechnic 2020/2021 academic year. The samples are 80% female and 20% male students.

The scoring sheet of Learning Object Review Instrument (LORI) developed by Nesbit, Belfer and Leacock was utilized to measure the effectiveness of SPADA. The questionnaire was confirmed its validity ($r > 0.191$) and reliability (Croncbach's Alpha = 0.914).

Based on score of response upon 18 question items of five-point Likert scale, the scores range between 104 to 523, and average 83. Then it is determined that the score 104-187 is strongly not effective (SNE), 188-271 is not effective (NE), 272-355 is rather effective (RE), 356-439 is effective (E), and 440-523 is strongly effective (SE).

RESULTS

The responses of distributed questionnaires reveal the effectiveness of SPADA of the first year students of Department of Business Administration Padang State Polytechnic as an online learning media.

Table 1. *The Score of LORI 6 Indicators*

Dimension	No.	Indicators	Score
Content Quality	1.	The structure of the material in SPADA is clear, the subject and sub-topics are clear, each has an introduction, explanation and summary	468
	2.	The video display is clear, the text is easy to read, the graphs and charts are adequately labeled and free from visual distractions	450
	3.	SPADA runs smoothly without any technical problems and errors.	430
		Average	**449,3**
Learning Goal Alignment	4.	The variety of learning objects in SPADA (text, images, audio, video, animation, simulation) is appropriate to the needs of the learning	456
	5.	When using SPADA I can concentrate well so that I can understand the material presented.	442
	6.	Using SPADA for learning, I understand the concepts in learning material	434
		Average	**444**
Presentation Design	7.	The layout of the SPADA features such as attendance, assignment collection rooms, and material are coherent and clear makes it easier for me to learn	447
	8.	The material presented in SPADA is interesting and easy to understand	441
	9.	The type, size and spacing of the letters are appropriate so that they are clearly readable	441
		Average	**443**
Interaction Usability	10.	The material in SPADA is presented in a communicative, complete language, and there are links to other sites or documents	453

	11.	Listed all the references used, especially for online references provided a special link that is more detailed to make it easier for students to learn	447
	12.	All the help features in SPADA can be used effectively in understanding learning material	443
		Average	**447,6**
Accessibility	13.	SPADA features a control design and presentation format for easy access for various users	441
	14.	SPADA provides default settings to suit the user	447
	15.	SPADA includes text on learning videos, audio files with transcriptions, and short descriptions on pictures	455
		Average	**447,6**
Motivation	16.	I feel motivated and interested in using SPADA	450
	17.	I feel directed and supported to participate in learning activities in SPADA,	457
	18.	Ease of access makes me want to keep learning to use SPADA	463
		Average	**456,6**
		Total Score	**8.065**
		Total Average	**448,1**

DISCUSSION and CONCLUSIONS

Content Quality. Table 2 shows the results of respondents' answers to measure the content quality indicators at SPADA Department of Business Administration. Researchers have asked several statements to 104 respondents. It can be seen that the quality aspect of the respondents' answers is dominated on a scale of 5 (SE). In the statement instrument number 3, there are four students who answered on a scale of 2 (NE) which stated that they did not agree if the SPADA activity went well without technical problems and errors in the system. Meanwhile, there was one student who stated that the answer strongly disagreed on the same instrument. Of the three indicators, only statement number 3 has an answer on a scale of 2 (NE) and 1 (SNE). The total score is 1,384 and the average is 449.3. The average on this indicator is on an interval scale of 440–453 (strongly effective). This shows that the quality of the SPADA content of the Department of Business Administration which includes clarity of material structure, material explanation, and technical fluency in the system is running well and is very effective for use as an online learning media.

Learning Goal Alignment. The results of respondents' answers to the assessment of learning objectives indicators range on a scale of 5 (SE), a scale

of 4 (E) as well as scale of 3 (RE). Of all the statements in this indicator, answer choice 4 (E) dominates the most. The total score 1,332 and the average is 444. The average on this indicator is on an interval scale of 440–453 and can be categorized as strongly effective. This means that all respondents strongly agree that SPADA has clear and conceptual learning objectives. This shows that the SPADA learning objectives, which include the accuracy of the facilities provided for the learning needs of students, as well as understanding the concept of the material if channeled through SPADA facilities, are very effective and clear to be used as online learning media.

Presentation Design. Table 2 shows that the assessment of all display design indicators received answers on a scale of 5 (SS), scale 4 (S), scale 3 (N) and scale 2 (NE). Of all the statements in this indicator, answer choice 4 (S) dominates the most. With a total score of 1,329 and an average of 443, this indicator is in the very effective category. In statements 7, 8 and 9 which are grouped in display design indicators, it is found that students tend to perceive the appearance of SPADA learning media as attracting their learning initiative while using the media. The arrangement of features, as well as the materials prepared are also easy to understand. The clarity of the letters makes it easier for students/readers to understand the teaching material.

Interaction Usability. The total score for interaction usability is 1,343 and the average is 447.6. The average on this indicator is on an interval scale of 440–453 (strongly effective). This shows that the ease of use of the SPADA, which contains a communicative language presentation, complete links to supporting learning materials and accommodation of the available help features, is very effective.

Accessibility. The total score is 1,343 and the average is 447.6 for the accessibility indicator. The average on this indicator is on an interval scale of 440–453 and can be categorized as strongly effective. This shows that the presentation of control designs on SPADA that can be accessed by various users is categorized as very effective.

Motivation. For motivation indicator is obtained 1,370 in the total score and 456.6 in the average. The average on motivation indicator is in strongly effective category. This means that all respondents strongly agree that SPADA builds student motivation and interest in learning. This shows that the SPADA learning objectives are very effective and clear to be used as online learning media.

To sum, based on students' responses, it can be seen that of the six dimensions, the dimensions of ease of use and accessibility are the most influential dimensions on the use of SPADA for students in the Department of Business Administration. The average result of these dimensions is 447.6 and can be categorized as strongly effective. The content quality dimension (average 449.3), learning objectives dimensions (average 444) and motivation dimension (average 456.6) are categorized strongly effective. The presentation design dimension with average score of 443 belong to effective category.

The effectiveness of the SPADA of the Department of Business Administration for 2020/2021 first-year students in general can be judged to be very effective based on the acquisition of an average total score of 448.1. It can be concluded that the application of the system and facilities presented by SPADA is very affirmative based on the elementary development of the

LORI theory. So far, the SPADA of the Business Administration Department has been running effectively without any significant obstacles.

This study has limitations in terms of research sample and data analysis. Therefore, it is hoped that future researchers will be able to broaden the scope of their research, particularly in research sampling, so that the results can be generalized. The use of complete nine indicators of LORI is also encouraged.

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