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MOBILE MEDIA LITERATURE APPLICATION FOR IDENTIFICATION OF STUDENT'S READING INTEREST

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Abstrak

Gerakan Literasi Sekolah (GLS) bertujuan untuk menumbuhkan budi pekerti remaja melalui budaya literasi (membaca dan menulis). Namun hadirnya wabah Covid-19, pendidikan Indonesia perlu menggunakan media daring agar pembelajaran tetap berlangsung. Banyak jenis platform yang digunakan untuk media pembelajaran daring, namun semua media tersebut belum mendukung kegiatan literasi sekolah, sehingga kegiatan literasi sekolah tidak berjalan seperti biasanya. Berdasarkan masalah tersebut diciptakan solusi yaitu aplikasi yang memberi kemudahan untuk kegiatan literasi berlangsung secara daring. Siswa bisa mengakses aplikasi ini untuk melakukan literasi secara online melalui laptop atau smartphone. Aplikasi ini mempermudah guru dalam memonitor jalannya program literasi secara daring.Ujicoba dilakukan kepada siswa di SMA Negeri 1 Geger. Hasil dari penelitian ini ditunjukkan dengan pengujian fungsional pada seluruh fitur memperoleh persentase 100% valid. Pengujian terhadap pengguna memperolah persentase rata-rata lebih dari 80%. Hasil pengujian tersebut membuktikan bahwa aplikasi ini dapat diterima oleh siswa, guru dan admin di State High School 1 Geger Madiun untuk membuat kegiatan literasi menjadi lebih efektif dan efisien.

Kata kunci: Literasi Digital, Media Literasi, Sistem Informasi

Abstract

The School Literacy Movement (GLS) aims to foster youth character through a culture of literacy (reading and writing). However, in the presence of the Covid-19 outbreak, Indonesian education needs to use online media to keep learning going. Many types of platforms are used for online learning media, but all of these media do not support school literacy activities, so school literacy activities do not run as usual. Based on these problems, a solution was created, namely an application that makes it easy for literacy activities to take place online. Students can access this application to do online literacy via a laptop or smartphone. This application makes it easier for teachers to monitor the course of online literacy programs. The results of this study are indicated by functional testing on all features obtaining a 100% valid percentage. Tests on users get an average percentage of more than 80%. The test results prove that this application can be accepted by students, teachers and admins at State High School 1 Geger Madiun to make literacy activities more effective and efficient.

Keywords: Digital Literacy, Media Literacy, Information System

INTRODUCTION

Indonesian people's interest in reading books is still low. UNESCO states that the reading interest index in Indonesia has only reached 0.001 which means that every 1000 residents only one has an interest in reading(Irawan, Yusufianto, Agustina, & Dean, 2020). According to (Suragangga, 2017) efforts to increase student interest in reading the Ministry of Education and Culture (Kemendikbud, 2019) has launched a flagship program called the School Literacy Movement (SLM) which aims to foster youth character through a culture of literacy(Yamin, 2017). The Covid-19 pandemic is a tragedy that has grieved the entire population of the earth. All segments of human life on earth are disrupted, without exception education. Many countries have decided to close schools, colleges and universities, including Indonesia. According to (Aji, 2020) the Ministry of Education under the leadership of Minister Nadiem Makarim, echoes the spirit of increasing productivity for students to

increase job opportunities when they graduate from a school. However, with the sudden presence of the Covid-19 outbreak, the world of education in Indonesia needs to follow a path that can help schools in an emergency situation. Schools need to force themselves to use online media(Faisal, Handayanna, & Purnamasari, 2021).

The change in learning methods is very different from old habits, teachers and students must be able to adapt to the maximum use of digital technology in order to be able to continue learning despite the Covid-19 pandemic (Hidayat, Rohaya, Nadine, & Ramadhan, 2020). According to, at SMAN 1 Geger Madiun learning during the pandemic has adjusted to using online media through various types of platforms. The types of platforms used include the Learning Management System (LMS), for video conferencing purposes using Zoom, Google Meet, or Whatsapp Group. However, all of these media have not supported school literacy activities, so school literacy activities are not running as usual(Nurdin & Anhusadar, 2020).

According to research the high level of use of digital technology among students who are technically quite prepared in implementing digital technology-based learning processes(Akbar & Anggraeni, 2017). To achieve maximum results in the learning process, a person is not only required to be able to use digital devices well, but also must understand all things related to digital technology. This is also known as digital literacy.

According to digital literacy skills are mastery of individual awareness, attitudes, and abilities in utilizing digital devices to communicate and express real things in everyday life(Antoro, 2017). Digital literacy does not only focus on mastering digital technology, but emphasizes mastery of other skills such as: computers, internet, text, media, visuals, audio, or the web, which are presented through digital technology devices.

From the problems above, we offer an idea to build an application, where the application makes it easy to assist in continuing literacy activities before learning takes place in the midst of this online pandemic. Students can access this application to perform literacy for 15 minutes and fill in a review of the results read online via a smartphone. In addition, this application makes it easier for teachers to monitor the course of online literacy programs. Teachers can immediately find out the results of reviews from students and can directly provide an assessment through this application .

RESEARCH METHODS

Waterfall Methodology

The waterfall method is often called the classical life cycle, the name of this model is actually the "Linear Sequential Model" where it describes a systematic and sequential approach to software development, starting with the specification of user requirements and then continuing (Puspita, Fahmi, & Yuningsih, 2019). through the stages of planning (planning), modeling (modeling), construction (construction), and delivery of the system to users (deployment), which ends with support for the complete software produced. It is called a waterfall because the stages that are passed must wait for the completion of the previous stage and run sequentially (Frieyadie, 2016). The method in developing Mobile-Based Literacy Media at State High School 1 Geger Madiun uses the waterfall method.

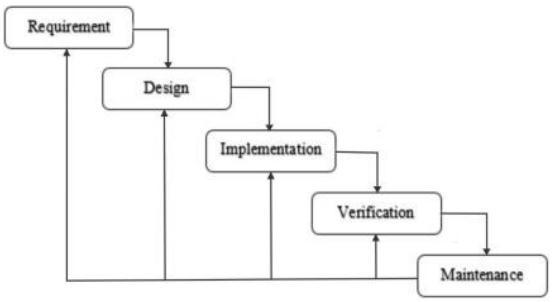

Figure 1. Waterfall Methodology

In the methodology used, there are 5 stages, as shown in Figure 1. The complete explanation is as follows.

1. Requirement

System development at the requirements stage requires communication that aims to understand the software expected by users and the limitations of the software. Information obtained through interviews and direct discussions with one of the teachers of State High School 1 Geger Madiun. In addition, the data obtained also from direct observations at State High School 1 Geger Madiun. The information is analyzed to get the data needed by the user.

Time and Place of Research

This research was conducted in January-February 2020 at State Senior High School 1 Geger, Jl. Raya Uteran No. 634, Sumberejo, Geger, Madiun, Jawa Timur 63171.

Research Target / Subject

The targets/subjects of this research are students and teachers of State High School 1 Geger

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Madiun. This study aims to make literacy activities run even in the midst of an online pandemic.

Data, Instruments, and Data Collection Techniques

The author obtained student data from the curriculum section of State High School 1 Geger Madiun. Then the author conducted a literature study, observation, and interviews.

a. Studi of Literatur
   Collecting literature, data, information from scientific journals, books, websites, and magazines.
b. Observation
   Read and observe directly at State High School 1 Geger Madiun how literacy activities have been going so far.
c. interview
   Direct interview with one of the teachers at State High School 1 Geger Madiun, what obstacles are often faced, what factors hinder literacy activities, as well as confirming the results of the data obtained from observations.

2. Design

The second stage is the design stage. This stage contains a system design that can help determine hardware and system requirements and also helps in defining the overall system architecture. The design of the designed system includes business processes, system architecture, flowcharts and use case diagrams.

Business Process

In this sub-chapter, describes the changes in the business process from before after the system was implemented to overcome the problems of the school literacy program at SMA N 1 Geger Madiun. The proposed Business Process diagram is described as shown in the image below.

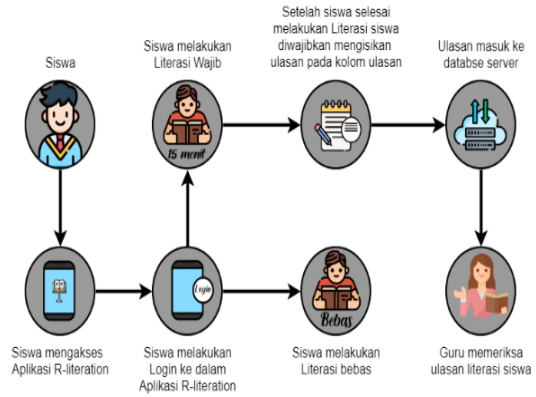

Figure 2. Process Business

In Figure 2. Process Business, is the flow after the system is created, where the literacy process is carried out online, students can do literacy very easily. Students can directly access the literacy application on their smartphone and perform literacy. After that, the student fills in a review of what he reads in the review column, the review can be in the form of voice or text. The results of student reviews are entered in the web server for the process of calculating the number of words to provide an assessment automatically, and the teacher can immediately see the number of words from the results of student reviews.

System Architecture

This sub-chapter describes the system architecture design that will be implemented to overcome the problems of the school literacy program at SMA N 1 Geger Madiun. System architecture is a conceptual model that describes and represents a system. The system architecture consists of system components that will work together to implement the system as a whole (Aryani & Assegaff, 2017).

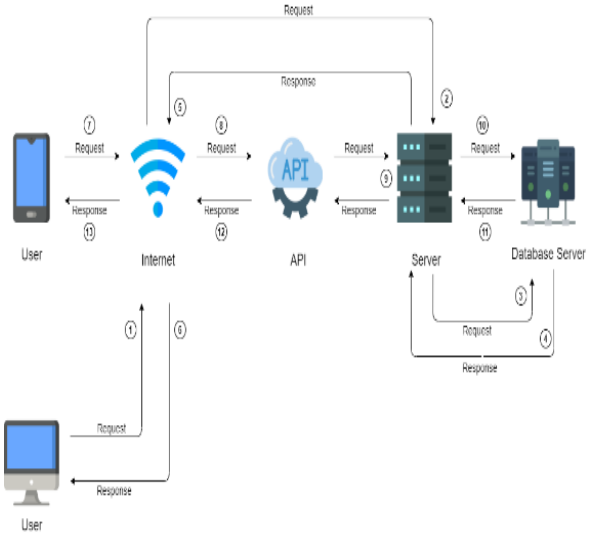

Figure 3. System Architecture

In Figure 3. System Architecture above it can be seen that the system will be developed for 4 users. These users include students, teachers, admins and super admins. From the side of the first user, namely students login to the literacy application and access the books contained in the application, after carrying out literacy students fill out the reviews they read. Student reviews go to the API in the server application, in the review server application it goes through the word count process to get an automatic rating. After that the results of the assessment from the review can be seen by

students after receiving verification from the teacher. Teachers have login access in the form of a website application. Application access for teachers is used to view student literacy results, in the form of reviews that have been filled in and automatic assessments from the system(Wali & Safrizal, 2018). In addition, the teacher can also print information on the recap of the results of student reviews per class for archiving. From the admin side, the first admin logs in as admin of a web-based server application to manage literacy data. Admin also receives and responds to requests from users. Admin is responsible according to access rights to regulate the literacy process. From the super admin side, the first super admin logs in as a web-based application server super admin to manage the application. Super admins also receive and respond to requests from users. The super admin is responsible according to his access rights to manage the process of using this application by the school.

Flowchart

The following is a flow diagram for the literacy application of State High School 1 Geger Madiun. The first flow chart is the student flow chart described in figure 4.

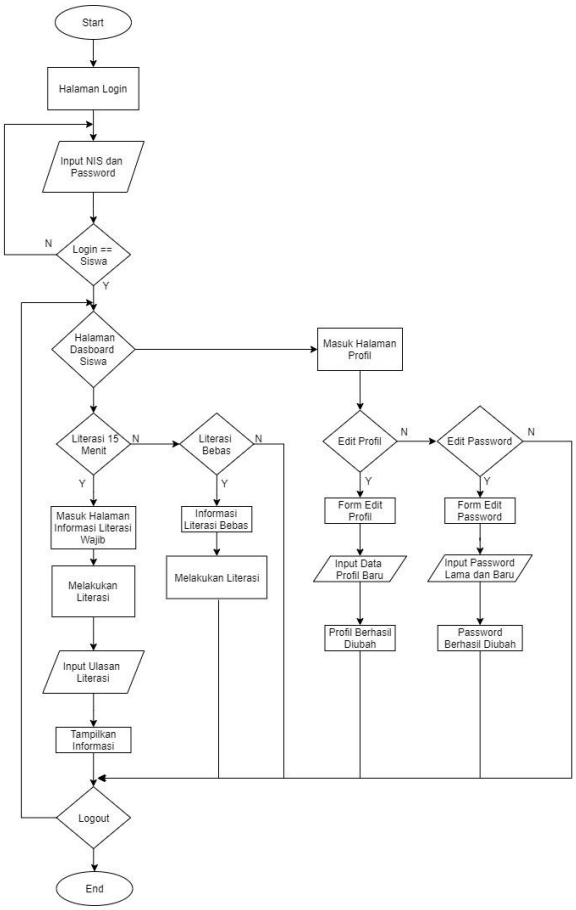

Figure 4. Flowchart literacy application

The user enters the login page first, then inputs the NIS and password. After the user logs in as a student, he will enter the dashboard page. On the dashboard page there is a 15 Minute Literacy menu and Free Literacy. If students select the 15 Minute Literacy menu, they will enter the mandatory literacy page, students can immediately choose a book and do 15 minutes of literacy. When the time is up, you will go to the review writing page of the book you have read. After writing a review, submit it and go to the information page. If students choose free literacy, then students go directly to the free literacy page and choose a book. Furthermore, students can immediately do free literacy at any time and without a count of time.

Use Case Diagram

Use case diagram is a scenario description of the interaction between the user and the system. Use case diagrams describe the relationship between application users and activities or interactions with the application. In this designed system, there are 4 actors including super admin, admin, teacher, and students. The use case diagram of this application can be seen in figure 5a until figure 5c.

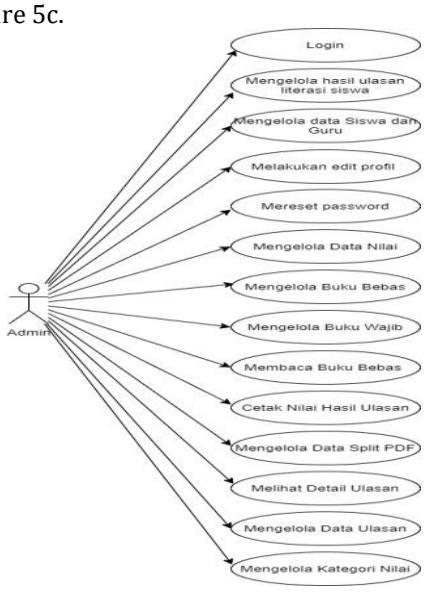

Figure 5a. Use Case Diagram Admin

In Figure 5a until figure 5c. Use Case The diagram above shows a use case diagram of 4 actors including super admin, admin, teacher, and students. Use case diagrams help in starting to design an application because with this the results of making the application are understood. The system contained in the application can be used by users easily because the initial design has been designed so easily.

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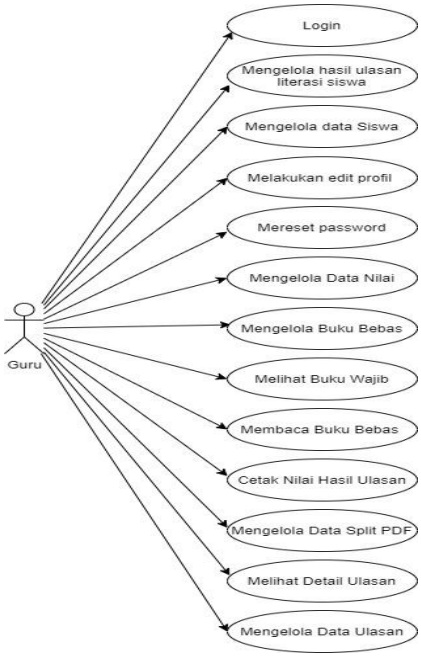

Figure 6b. Use Case Diagram Guru

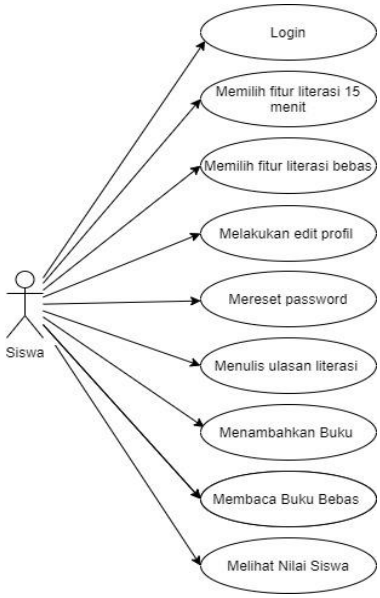

Figure 7c. Use Case Diagram Siswa

3. Implementation

In the third stage, the waterfall method explains the implementation part, implementation is the implementation stage and at the same time testing for the system based on the results of the analysis and design that has been done. The system that was built this time has two base systems, namely website-based and also android(Siregar, Sitorus, & Juwariah, 2021). On the website side, it is designed for all actors, namely admins, teachers and students. On the android side, it is focused on student users. The following is a display of the system dashboard design from the website and android side. Dashboard view in website platform for user as shown in figure 6. And Dashboard view in mobile platform for user as shown in figure 7.

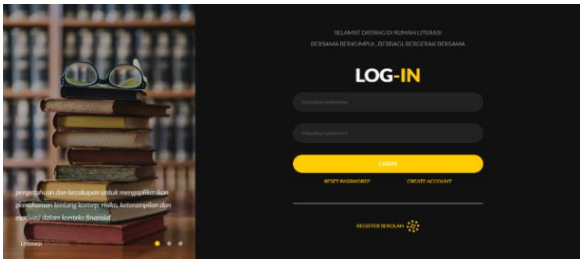

Figure 8. Website Dashboard View

4. Verification

The next stage is verification, at this stage, the system is verified and tested whether the system fully or partially meets the system requirements, testing can be categorized into unit testing, system testing to see how the system is running well by testing all the functions that exist in the system. . The unit testing we use is blackbox testing with the equivalence partitions method.

And testing on users was carried out directly at State High School 1 Geger Madiun. This test was carried out by several students, teachers and IT staff. Testing is done by distributing questionnaires to users who were previously given a tutorial on using the literacy system directly by the application developer.

5. Maintenance

The next step, namely maintenance,it is the final stage of the waterfall method. The finished system is run and maintenance is carried out. Maintenance includes fixing errors not found in the previous step.

RESULTS AND DISCUSSION

Implementation

The display of this literacy system is the result of a system design consisting of several views as follows. Main page application as shown in figure 8.

Figure 9. Main Page Application

Each user will enter the main page of each if successful login. For example, if a student successfully logs in, the UI features will be shown as in figure 9. On the page shown in figure 9, it is shown literacy features. This free literacy feature is used by students to do free literacy without any time limit and can choose books according to their wishes,

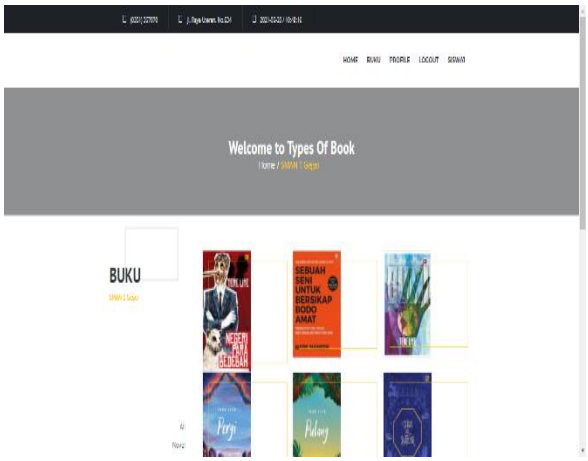

Figure 10. Implementation of Free Literacy Features

The reading literacy display feature can be seen in Figure10. In this feature students can start reading textbooks from the app. This is the main feature of the developed application. Students are given time to read before giving a review.

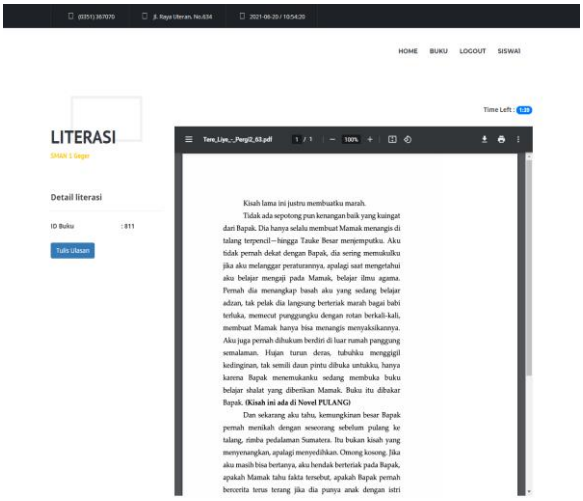

Figure 11. Implementation of Compulsory Literacy Features

This mandatory literacy feature is used by students to carry out compulsory literacy for 15 minutes provided that the book only reads 1 book page and is limited to 10 minutes. During the next 5 minutes they will enter the write review feature, in this feature students write down the results of the book reviews they have read then the results of the reviews will be entered into the database and will be assessed automatically by the system. to clarify the Figure11 shows the UI of the system

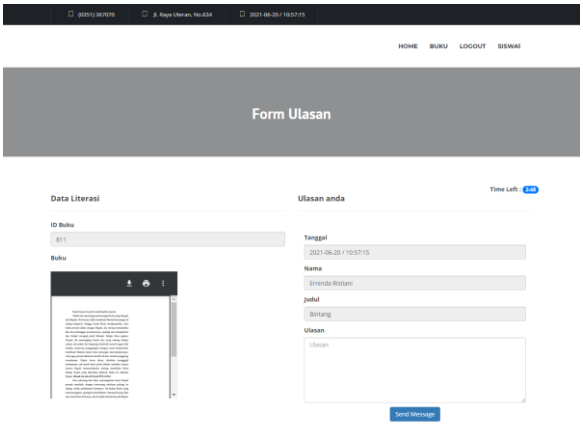

Figure 12. Implementation of the Write a Review Feature

This mandatory literacy feature is used by students to carry out compulsory literacy for 15 minutes provided that the book only reads 1 book page and is limited to 10 minutes. During the next 5 minutes they will enter the write review feature, in this feature students write down the results of the book reviews they have read then the results of the reviews will be entered into the database and will be assessed automatically by the system. to clarify the Figure11 shows the UI of the system.

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The feature to display the value from the user will be shown in Figure 12. This value viewing feature is used by students to find out the results of the assessment from the reviews that have been filled in. All literacy records carried out by students are stored in the database, it is hoped that further research can be analyzed based on the parameters contained in the data log. One of the things that can be analyzed is students' interest in a type of book.

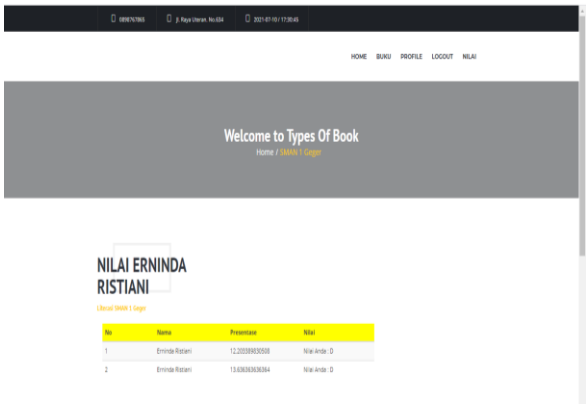

Figure 12. Value Viewing

System Functionality Testing

In this sub-chapter, we will explain about application testing in terms of its functionality. Blackbox testing which is carried out using the equivalence partitions method is a test based on the input of each menu contained in this system, each input is tested through classification and grouping based on its function. This test will be carried out in several stages. In the first stage, it begins with determining the Test Case of the software to be tested using the Equivalence Partitions method and then initializing the Standard Grade Partition input and output. In the test results there is a Test Case design table that serves to conclude whether the system is successful in testing that type or not(Merrett, Horng, Piggot, Qandour, & Tong, 2019).

System functionality testing on all features that have been carried out can be concluded that this application after functional testing has been running well. This is supported by simple data processing so that users do not experience difficulties in using it.

User Acceptance Testing (UAT)

User Acceptance Test (UAT) is a test carried out by end-users, parties who directly interact with the system and verify whether the existing functions have been running as needed. The UAT test is carried out using in-depth interviews, which are interviews with respondents. In making this application, UAT was carried out using a survey method, namely distributing questionnaires to users who were previously given a tutorial on using this literacy system (Priyatna, Hananto, & Nova, 2020). The test was carried out at SMA Negeri 1 Geger, Madiun Regency on June 16, 2021 by students, teachers and IT staff who act as admins. After using the application, the user fills out a questionnaire.

Table 1. Student Test Results

No.	Question	Strongly Agree	Agree	Netral	Disagree	Strongly Disagree
1	Is the appearance of this application attractive?	17	6	5	1	0
2	Is the application easy to operate?	17	8	4	0	0
3	Is the color display in the application pleasing to the eye and not boring?	15	7	5	2	0
4	Are the menus of this application easy to understand?	16	8	4	1	0
5	Are the menus and page views of the app easy to remember?	14	8	6	1	0
6	Is the 15-minute mandatory literacy feature working well?	15	6	6	2	0
7	Does the free literacy feature work well?	15	9	4	1	0
8	Is the add book feature working well?	14	7	7	1	0
9	Does the profile feature to change student profiles work well?	14	7	7	1	0
10	Is the feature of seeing the value of review results working well?	14	7	7	1	0
11	Can this application make it easier for students to carry out literacy activities?	17	8	2	1	1
12	Will this application help students find reading books to do literacy?	15	7	6	1	0
13	Does this application make students more likely to read books?	15	4	10	0	0
14	Does this application make students more diligent in carrying out literacy activities?	14	5	10	0	0

Table 2. Teacher Test Results

No.	Question	Strongly Agree	Agree	Netral	Disagree	Strongly Disagree
1	Does this application look attractive?	3	3	0	0	0
2	Is the app easy to use?	4	2	0	0	0
3	Is the color display in the application pleasing to the eye and not boring?	2	4	0	0	0
4	Are the menus of this application easy to understand?	2	4	0	0	0
5	Are the menus and page views of the app easy to remember?	1	4	1	0	0
6	Does the feature for managing student literacy review results work well?	5	1	0	0	0
7	Are the features for managing student data running well?	4	2	0	0	0
8	Does the feature for managing student grade data work well?	5	1	0	0	0
9	Does the feature for managing free books work well?	5	1	0	0	0
10	Is the add book feature working well?	6	0	0	0	0
11	Does the profile feature to change the teacher profile work properly?	4	2	0	0	0
12	Does this application make it easier for teachers to monitor student literacy activities?	5	0	1	0	0
13	Does this application reduce the burden on teachers in providing assessment results of student reviews?	3	2	1	0	0
14	Does this application make literacy activities run more effectively?	5	1	0	0	0
15	How much do teachers agree that this application helps make it easier to provide literacy for students?	4	2	0	0	0
16	Does this application increase students' reading interest?	6	0	0	0	0
17	Does this application make students more diligent in reading books?	0	5	1	0	0

Table 3. Admin Test Results

No.	Question	Strongly Agree	Agree	Netral	Disagree	Strongly Disagree
1	Does this application look attractive?	1	1	0	0	0
2	Is the app easy to use?	2	0	0	0	0
3	Is the color display in the application pleasing to the eye and not boring?	1	1	0	0	0
4	Are the menus of this application easy to understand?	1	1	0	0	0
5	Are the menus and page views of the app easy to remember?	1	1	0	0	0
6	Does the feature for managing student literacy review results work well?	1	1	0	0	0
7	Are the features for managing student and teacher data running well?	0	2	0	0	0
8	Does the feature for managing student grade data work well?	0	2	0	0	0
9	Does the feature for managing free books work well?	2	0	0	0	0
10	Is the feature for managing mandatory books running well?	1	1	0	0	0
11	Does the feature for managing book data in the form of split PDFs work well?	2	0	0	0	0
12	Does the feature for managing value categories work well?	0	2	0	0	0
13	Does the profile feature to change the admin profile work properly?	1	1	0	0	0
14	Does this application make it easier for admins to manage all student literacy data?	0	2	0	0	0
15	Does this application make literacy activities run more effectively?	1	0	1	0	0

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16	Does this application increase students' reading interest?	0	2	0	0	0
17	Does this application make students more diligent in reading books?	0	2	0	0	0

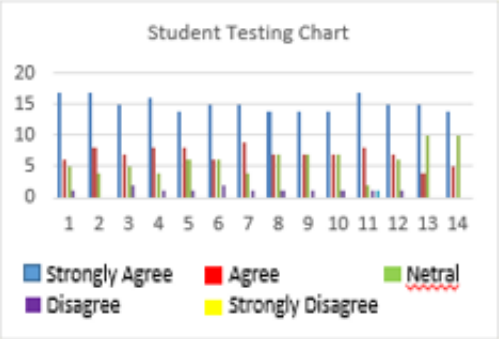

Chart 1. Student Testing Chart

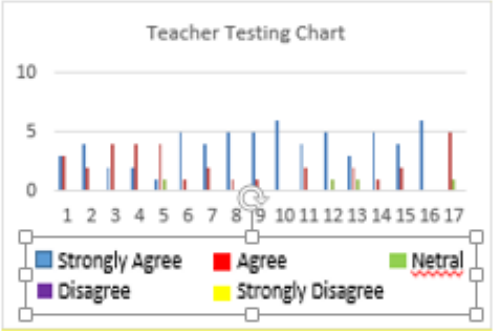

Chart 2. Teacher Testing Chart

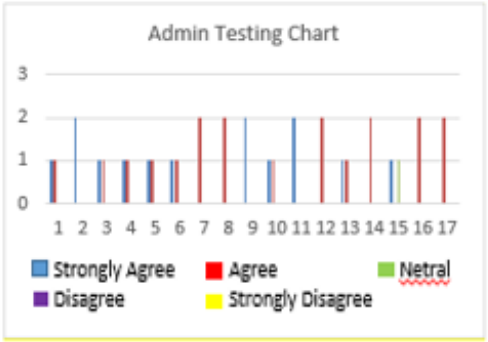

Chart 3. Admin Testing Chart

From the test results presented in the table 1-2 and chart 1-3, it can be seen that the percentage results are 85% of students, 92% of teachers and 88% of admins with these results obtained an average percentage of more than 80%.

CONCLUSIONS AND SUGGESTIONS

Conclusion

Based on the results obtained in the preparation of the final report, the following conclusions can be drawn:

With this media literacy application, the implementation of the literacy program at State High School 1 Geger Madiun can run online, making it easier for students to carry out literacy activities wherever students are without having to look for reading books and also making it easier for students in the process of writing reviews. In addition, this application makes it easy for teachers in the process of collecting literacy reviews and makes it easier for schools to monitor student literacy activities. The results of functional testing carried out on all features obtained a 100% valid percentage. In addition, this application has been tested directly by the IT team, several teachers and several students of State High School 1 Geger Madiun. Tests were carried out on several main features, obtaining a percentage of 85% of students, 92% of teachers and 88% of admins with this result obtained an average percentage of more than 80%. The test results prove that this application can be accepted by students, teachers and admins at State High School 1 Geger Madiun to make literacy activities more effective and efficient.

Suggestion

Based on the lusions listed above, the authors put forward suggestions that can help for further development of this application in order to provide more benefits for users:

Based on the conclusions listed above, the authors propose suggestions that can help for further development of this application in order to provide more benefits for users. Optimized the appearance of the user interface to make it more attractive. In the application, proded auto-grading should be added for the review assessment process so that student review scores are more accurate.

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