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Development of E-Learning ICT Guidance at Hidayatul Musthafawiyah Salafiyah Islamic Boarding School

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Abstract

This study aims to develop website-based E-Learning on ICT guidance activities at Hidayatul Musthafawiyah Salafiyah Islamic Boarding School. This study uses Research and Development (RandD) methods. This research method uses a 4-D development model to analyze the key stages; defining, designing, developing, and disseminating. The trial was conducted on three learning media experts and 37 students at PPS Hidayatul Musthafawiyah. Descriptive analysis data used in this research activity will include analyzing the validity, practicality, and effectiveness of ICT guidance extracurricular E-Learning. The result shows that the ICT-Counseling extracurricular e-learning verification test score is 96.2%, a valid category. The overall rating of the Practical Aptitude Test is 92.77%, which is an efficient category. The overall effectiveness test rating was 98.51%, indicating that this category was used effectively. This research is in developing a valid, practical, and effective platform in an Islamic boarding school setting. In future research, the effectiveness of the developed e-learning platform can be evaluated through a comparative study with traditional classroom learning or other e-learning platforms. Additionally, further research can be conducted to develop e-learning platforms for other extracurricular activities in Islamic boarding schools.

Keywords ICT; E-Learning; Moodle

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1. INTRODUCTION

The primary and patterned struggle for realizing and giving birth to human beings as educated and the atmosphere in learning activities enables students to provoke their competence actively. So, they have the power of self-control, personality, and spiritual religion, as human beings with noble character, skills, and intelligence, which are useful for the community, nation, and state based on Law number 20 of 2003 (Chomaidi&Salamah, 2018).

Technological and scientific innovations often evolve and progress along with the growth of time and human ways of thinking. Various of them include web development innovation, which plays an essential role. Media information is one of the benefits for students and teachers. At the same time, limited space and time are core constraints for improving the quality of education (Novaliendry et al., 2021).

Web users in the educational sphere are examples of e-learning, often referred to as (WBTweb-based training). The web provides an efficient time and quick delivery of the desired information. Not limited by time and school dimensions, e-learning combines two words: E, which stands for electronics (electronic), and learning (learning). E-learning is a learning activity that uses electronic devices to support these activities. More specifically, the process of a series of learning activities between students and teachers that do not require students and teachers to meet face-to-face is called e-learning. This is due to the help of electronic devices connected to Internet facilities so that students can carry out learning activities wherever and whenever they are not required to attend school or campus. Some students who are unable to participate directly in learning activities but these students intend to do well in learning so that they can continue to a higher level of e-learning are considered an educational solution (Schunk, 2020). An important problem with learning today is the limited literacy resources that schools provide in learning activities that improve student learning outcomes. Due to the limited availability of books in schools, almost all students do not own books as literacy. A lack of variation in the learning process makes students feel bored with learning activities at school (Fadilah, 2021).

HidayatulMusthafawiyah Islamic boarding school is located in Jambi, Indonesia. It was established in 2003 and aimed to provide education and guidance in Islamic teachings to its students. The school offers a full-time program for male students, from elementary to high school, focusing on Quranic studies, Arabic language, Islamic jurisprudence, and character development. The curriculum is designed to provide a comprehensive understanding of Islam and its values and practical skills for students to apply daily. In addition to the academic program, the school also offers extracurricular activities such as sports, arts, and community service. The school's facilities include a mosque, a dormitory, a library, and a computer lab. The school has a strong reputation for producing students who are knowledgeable and committed to their faith(Kemenang Bungo, 2019). It has also actively promoted interfaith dialogue and cooperation with other religious groups in the local community. The case with the Tahfidz hut only focuses on memorizing the AL-Qur'an (Oktaviani, 2022). Besides, ICT is one of the favorite extracurriculars that learners choose (A. F. N. Padli, personal communication, 2022). So, ICT needs document guidance to facilitate the learner's needs.

ICT guidance extracurriculars are made because there is no learning about ICT. At the same time, students need this learning to improve their competence as a provision for later use when studying or working, such as using Microsoft Office applications. Due to limited literacy sources, such as books, the lack of computers provided by Islamic boarding schools makes students have to join and take turns using computers. There is no time to repeat learning that has been done due to the prohibition of bringing Smartphones or Laptops to Islamic Boarding Schools, making students often forget about learning activities.ICT guidance extracurricular activities because the semester break lasts 1-2 months. Based on the results of my interviews with several students, students mostly spend their vacation time playing smartphones such as games, YouTube, and TikTok. Therefore, ICT guidance is still held during holidays with a Saturday and Sunday schedule to maximize their ICT skills as a provision for college

and work. It is necessary to have media as a handbook in the ICT learning process. It is decided to create an e-learning website that can be accessed anywhere and anytime via a laptop or smartphone. E-learning includes various standard category facilities in learning activities, such as material distribution activities, discussion forum activities, or homework assignment activities that can be carried out by educators and those who are educated. Therefore, the authors want to develop a website-based e-learning system for ICT guidance in extracurricular activities at PPS HidayatulMustahafawiyah, which is valid, practical, and effective.

Technology has become integral to our daily lives in today's fast-paced world. From smartphones and social media to cloud computing and e-commerce, the advancements in information and communication technology (ICT) have revolutionized how we live, work, and interact with each other(Aziz, 2020; Slodek et al., 2020). As a result, it is more important than ever for students to develop their ICT skills and knowledge. Extracurricular activities can provide an excellent opportunity for students to explore an

d enhance their ICT abilities outside the classroom. It provides a comprehensive guide on ICT extracurricular activities available for students, their benefits, and how they can help young people develop the necessary skills for a successful career in the digital age. Firstly, one of the most popular ICT extracurricular activities is coding clubs. Coding clubs provide a space for students to learn and practice coding skills, ranging from basic HTML and CSS to more advanced programming languages like Python or Java. These clubs often have experienced mentors who guide students through the learning process, helping them to develop problem-solving skills and creativity while building their confidence in writing code (Aziz, 2019). Moreover, coding clubs offer a collaborative environment where students can share ideas and work on projects together.

The research result shows that E-learning has a positive impact on learning outcomes. Based on (Fransisca, 2017), (Ikhsani Putra, 2022), and (Pranata, 2019), it can be concluded that e-learning has a positive impact on learning outcomes. All three studies showed high scores regarding the validity, practicality, and effectiveness of e-learning media in vocational high schools. The effectiveness scores ranged from 80.68% to 82.13%, indicating that e-learning is an effective medium for learning.

Additionally, the studies highlighted the importance of using responsive PHP web and MySQL databases in e-learning website development to ensure the validity and practicality of the e-learning media. These findings suggest that e-learning is a viable option for improving learning outcomes in vocational high schools. It can be an effective tool for educators to enhance their teaching methods.

The given statement highlights the importance of ICT guidance in extracurricular activities in Islamic Boarding Schools to enhance students' competence in ICT tools such as Microsoft Office applications. The author points out the limited availability of resources such as books and computers, making it challenging for students to improve their ICT skills. Furthermore, the author observes that during vacations, students spend their time playing games, watching YouTube, and using social media apps, indicating a need to provide an alternative platform to engage students in productive learning activities. The author proposes the development of an e-learning website that can be accessed through laptops or smartphones. The website will offer various features such as material distribution, discussion forums, and homework assignments. The author believes the proposed website-based e-learning system will be valid, practical, and effective in guiding ICT extracurricular activities.

However, the author's statement lacks some essential information to support the proposal entirely. Firstly, there is no mention of the cost of developing and maintaining the e-learning website. It is unclear how the author plans to fund the project and whether it will be sustainable in the long run. Additionally, the author does not provide evidence to support the claim that the proposed e-learning system will effectively enhance students' ICT skills. A thorough evaluation of the system's effectiveness is necessary to justify its implementation.

Moreover, the author emphasizes the need for students to improve their ICT skills as a provision for college and work. While this is a valid point, the author does not mention any other benefits of ICT skills, such as improving students' critical thinking, problem-solving, and communication skills. Providing a comprehensive rationale for the importance of ICT skills would add more value to the author's statement. In conclusion, the author's statement highlights the need for ICT guidance in extracurricular activities in Islamic Boarding Schools. It proposes the development of an e-learning website to facilitate students' learning. While the proposal seems promising, the lack of information on cost and effectiveness evaluation and the narrow focus on college and work provision may limit its impact.

2. METHODS

Research and Development (R&D) is a type of research used by the author using the 4D model. Sugiyono (Sugiyono, 2018) defined the Research and Development method as carrying out research activities in a scientific way, carrying out production activities, product designing activities, and testing the validity of the products created. The research stages are seen in Figure 1.

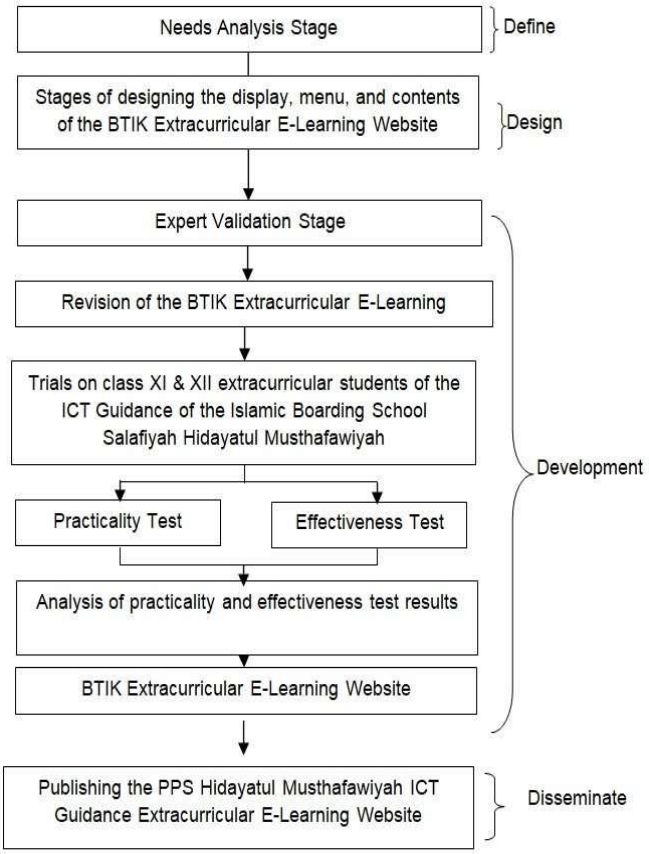


Figure1. Research Stages of ICT Guidance Extracurricular E-Learning Development

In Figure 1, it can be explained that the 4-D development model has the main stages of defining, designing, developing, and disseminating the core steps in research, not only according to the guidelines of the original version but also adapted to the needs of the subject and place of research. Moreover, the flow of the model is adjusted to what is needed for development in the field (Padli et al., 2021).

This research was carried out at PPS Hidayatul Musthafawiyah, in Cross Streat Sumatra Jambi-Padang SirihSekapur Village, Jujuan, Bungo, Jambi starting January 2-31, 2023. The target of research

activities is the development of ICT Guidance Extracurricular E-Learning in as many as two classes, totaling 37 students who participate in ICT Guidance extracurricular activities.

3. FINDING AND DISCUSSION

Define

The definition phase is an observation activity to obtain an overview of needs in ICT guidance extracurricular activities, which will later be given a solution in the e-learning that will be made. Here, the author has several basic problems: the lack of facilities, both literacy and computer resources available, and the learning time is quite short, that is, only 60 minutes to improve students' ICT competence. Researchers also learned through interviews with students that it is difficult for students to remember an ICT lesson simply by repeating learning through a note in a book. ICT guidance extracurricular activities are entirely practicum activities so that lessons can be recalled. The researcher also learned that the semester break was so long that students did not have activities to hone their competence.

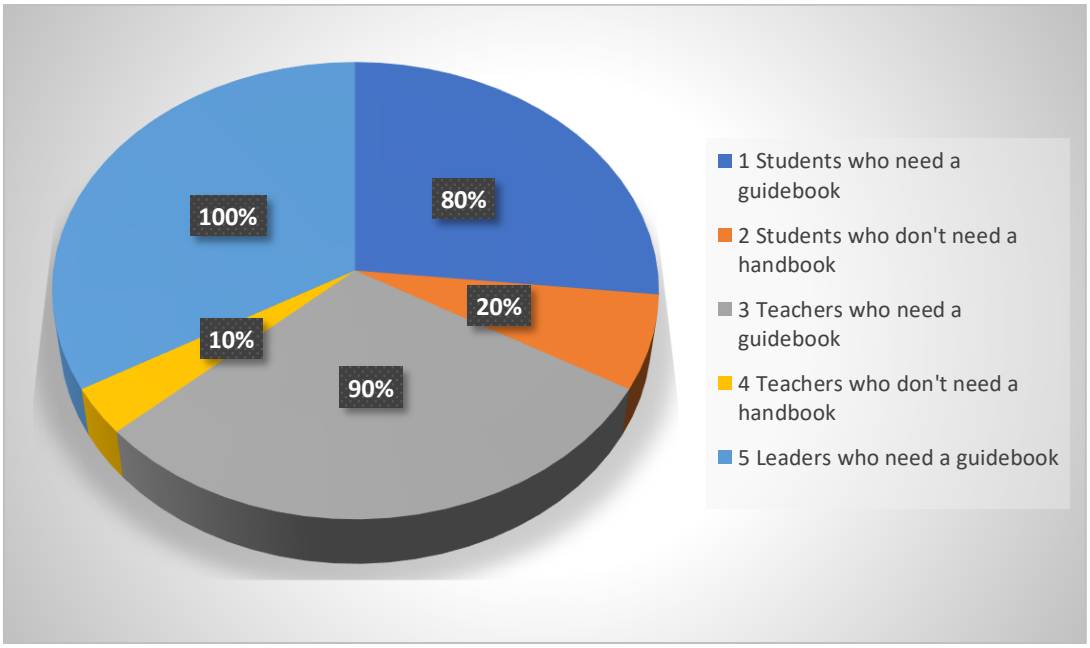


Chart 1. Result of Need Analysis

Based on the information obtained, it is necessary to develop ICT guidance for extracurricular e-learning. So activities to develop students' ICT competencies continue during semester breaks to fill holiday activities and enable students to repeat and recall lessons in ICT guidance extracurricular activities at home, which can be accessed later. Using laptops, smartphones, or e-learning, students will be equipped with the subject matter that can be downloaded directly, practicum learning videos, and quizzes to train their memory of ICT-guided extracurricular learning activities.

Design

In the design phase, the researcher carried out activities in the form of an initial design in the form of a flowchart that described a series of processes for accessing ICT guidance extracurricular e-learning. We can see this in Figure 2 below.

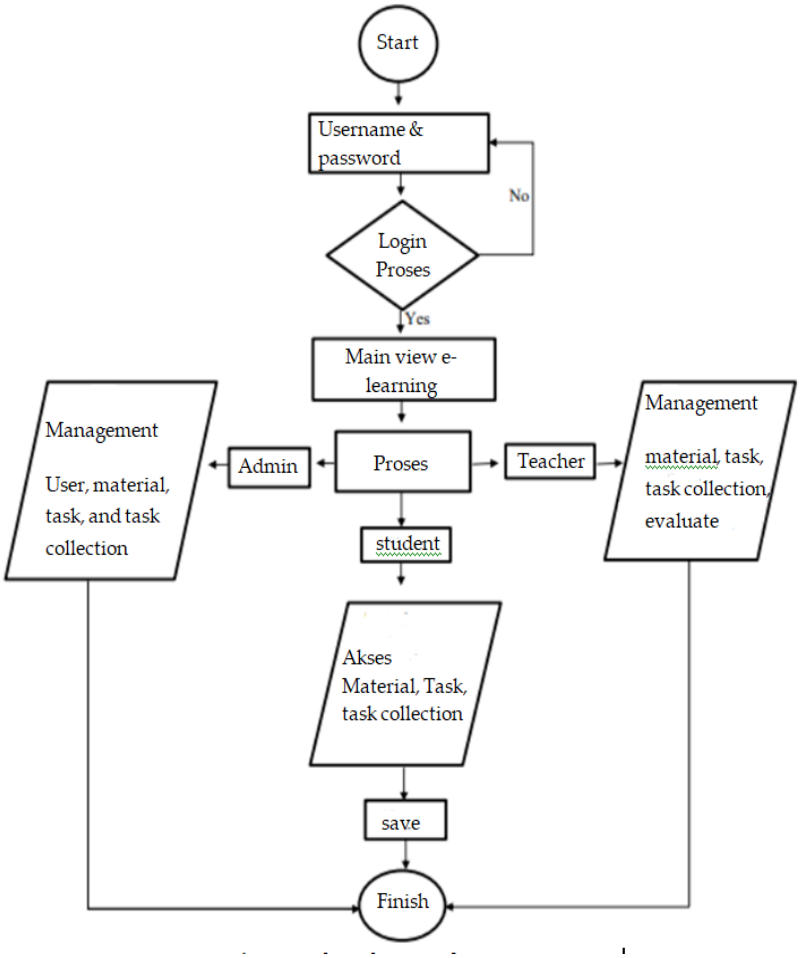


Figure 2. product development flowchart

Based on Figure 2, the researcher has developed a product development flowchart to describe the processes involved in accessing ICT guidance extracurricular e-learning. The flowchart shows different access rights for different user roles, such as admin, developer, and student.

In addition, the researcher has also designed various elements such as the logo, e-learning display backgrounds, and displays, and collected student photos for their profile. The researcher has also designed ICT guidance activities and created learning materials, videos, and quizzes to be inputted into the e-learning platform. Overall, this design phase seems to be focused on creating a comprehensive plan for developing the ICT guidance extracurricular e-learning product, covering various aspects such as user access, design, and content creation.

Development

Development stage at this stage, the researcher began to develop e-learning according to what the researcher had prepared at the design stage. At this stage, the researcher conducted development activities such as creating student and teacher accounts, making e-learning attractive with images that have been designed, inputting e-learning activities such as activities for attendance, inputting learning material, inputting learning videos, and making learning quizzes so that e-learning is ready to be used in learning. Researchers also distributed validity questionnaires to experienced media experts to validate them in determining whether the products developed were valid for use in learning based on several aspects of assessment. The results of e-learning development can be accessed at the linkhttps://bimbingantik.edukati.com. The main view is the login display shown in Figure 3.

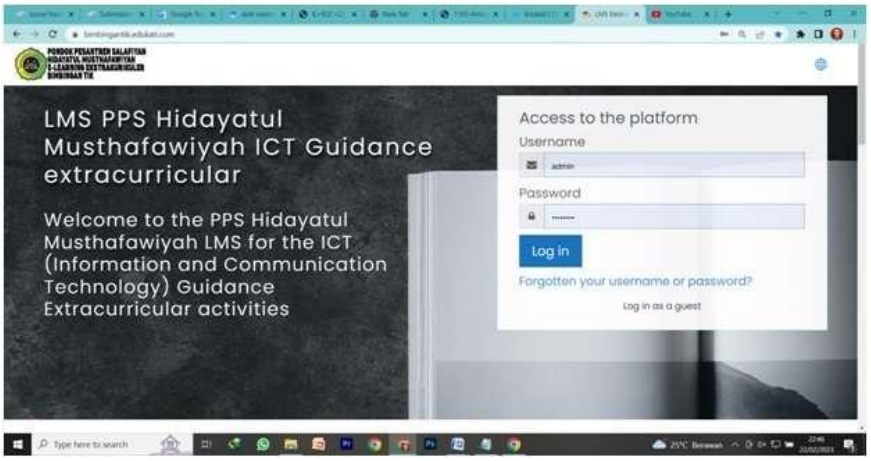


Figure 3. Login Display

In Figure 3, it can be seen that there is a school logo, remarks, language selection, username and password columns, and a login button where the ability to access e-learning requires a username and password that the admin has given. The dashboard displays in Figure 4.

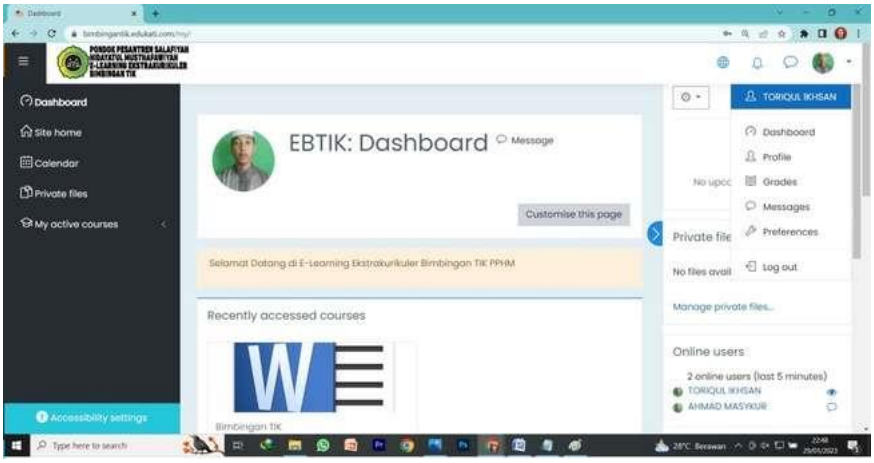


Figure 4. Dashboard Display

In Figure 4, we can see the dashboard display, the starting page of e-learning activities that displays user photos, classes attended chat features, notification features, and profile setting features. The home view is in Figure 5.

Figure 5. Site Home Display

In Figure 5, we can see the Site Home Display, which displays the classes attended by the students. There are three classes of activities in ICT guidance extracurricular: Microsoft Office Word, Excel, and PowerPoint.The calendar is displayed in Figure 6.

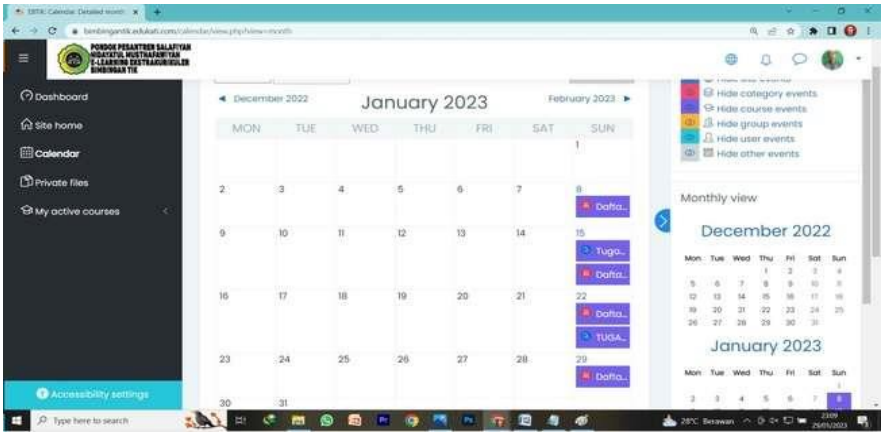


Figure 6. Calendar Display

In Figure 6, we can see the calendar view, which displays the activities that students must perform according to a predetermined time. The private file is displayed in Figure 7.

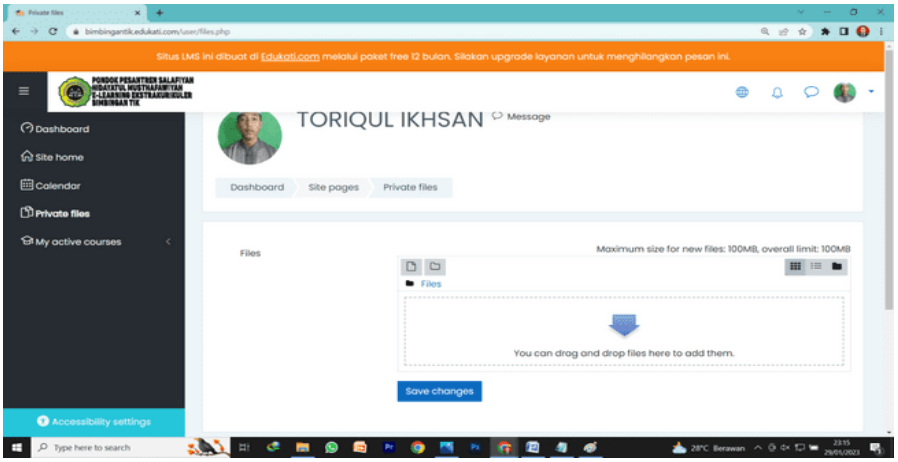


Figure 7. Private File Display

In Figure 7, we can see the private file view, which is a place where students can view personal files. The class activity is displayed in Figure 8.

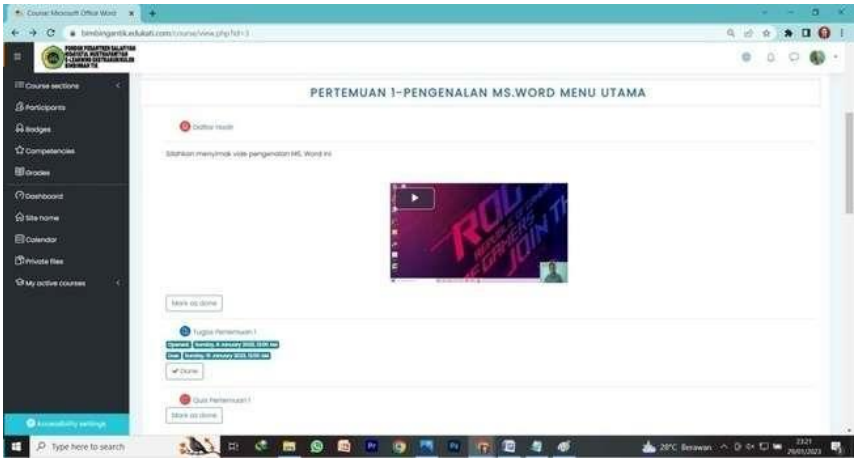


Figure 8. Class Activity Display

in figure 8, we can see the display of class activities. Various activities must be followed. In this view, attendance, assignments, learning materials, learning videos, and quizzes exist. The class attendance is displayed in Figure 9.

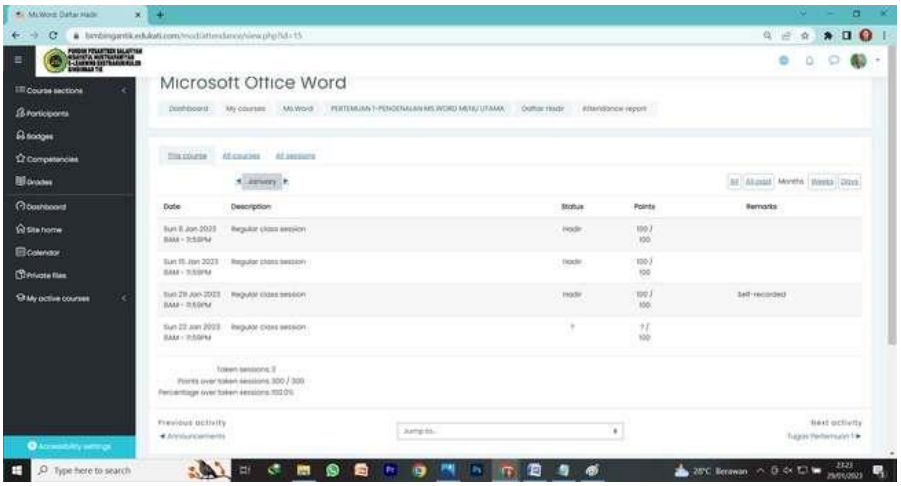


Figure 9. Class Attendance Display

In Figure 9, we can see the appearance of class attendance as a place for students or teachers to fill in attendance. The task is displayed in Figure 10.

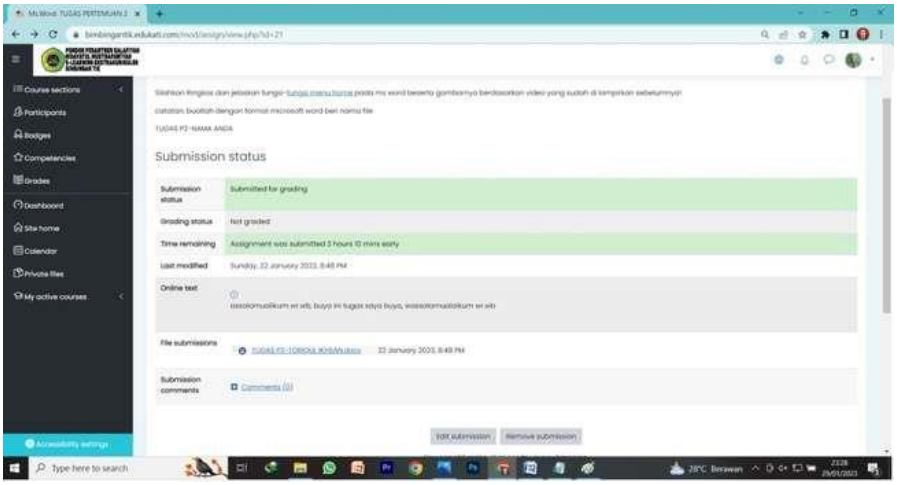


Figure 10. Task Display

In Figure 10, we can see the assignments that students must complete, in which there is progress status, grades, the deadline for completion, file submission, and a button to submit. The task inputs are displayed in Figure 11.

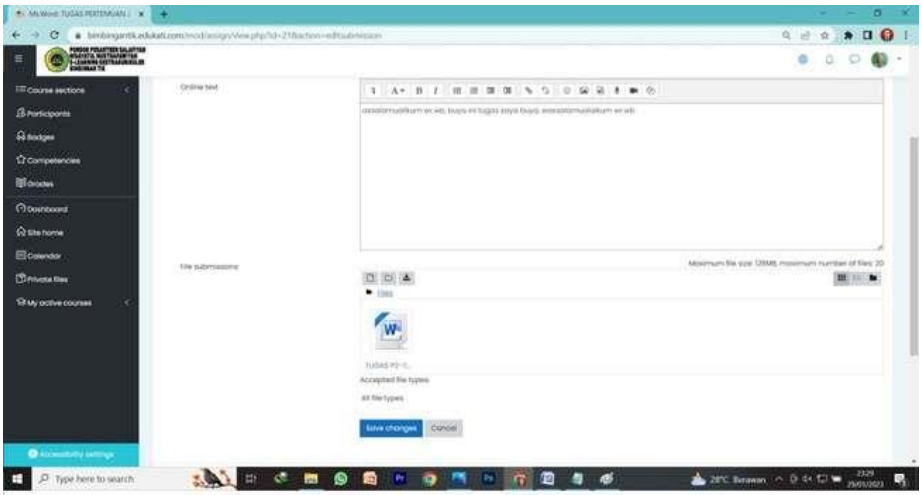
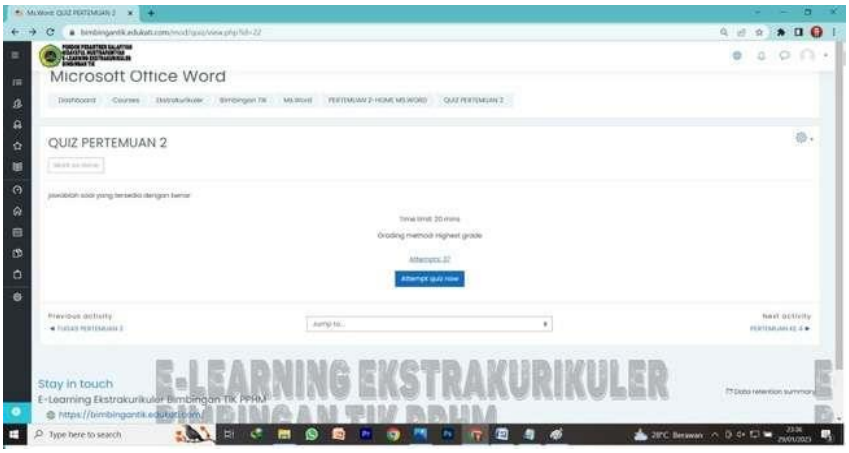
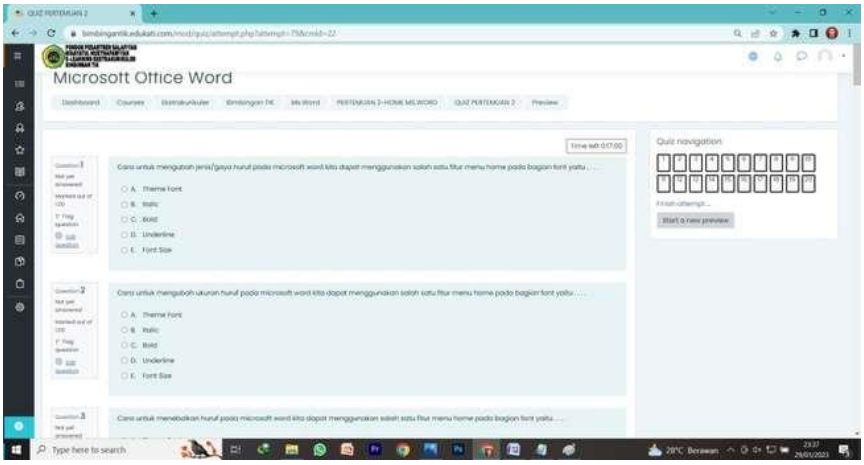


Figure 11. Task Input Display

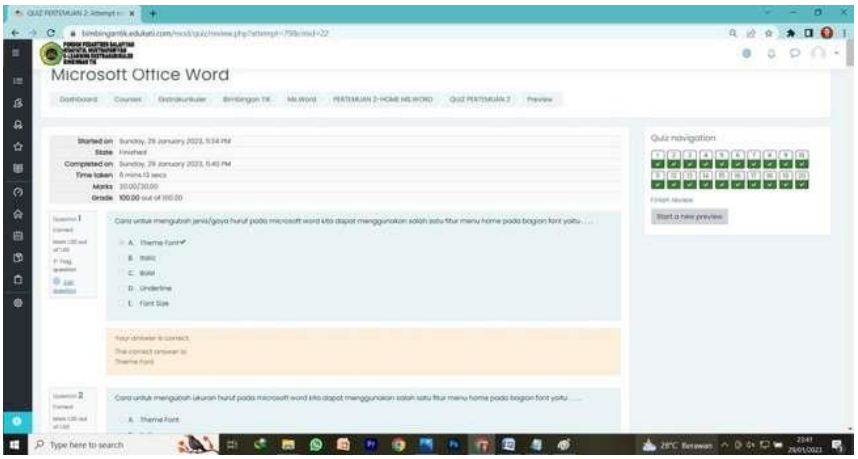
In Figure 11, we can see that the Assignment Input Display is where students can input assignments in the form of online text or submission files, and the assignment is saved and completed by pressing the save change button. The quiz is displayed in Figure 12.



(a)



(b)



(c)

Figure 12. (a) Pre-Quiz Display (b) Quiz Display (c)Finish Quiz Display

In Figure 12, we can see that the quiz display displays exam activities carried out by students within a specific time limit by selecting the answers by pressing the attempt quiz now button and clicking the quiz will automatically start the attempt. By pressing the finish attempt button at the end, and clicking to submit all finish, the quiz will end, and the scores will be displayed. The input activity is displayed in Figure 13.

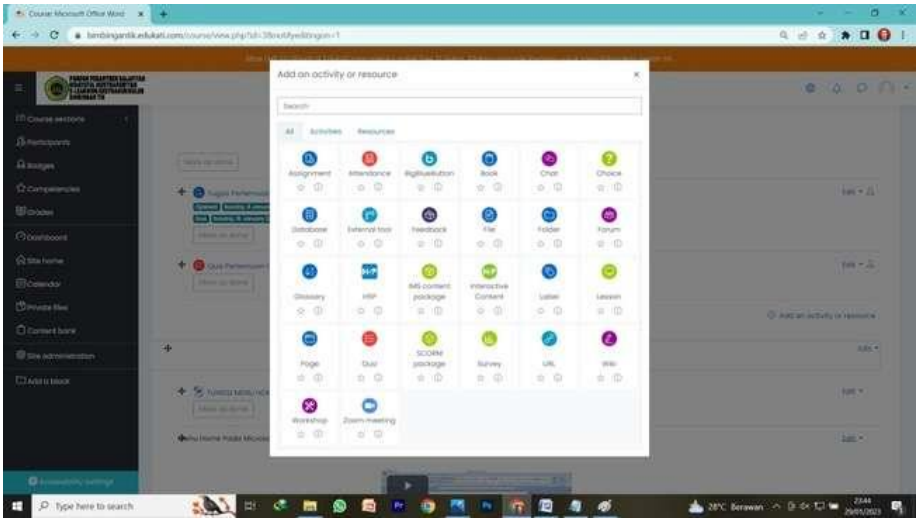


Figure 13. Input Activity Display

In Figure 13, we can see that the Input Activity display is a display that the admin or teacher can only access to enter a required learning activity, such as entering material, videos, quizzes, attendance, etc. The display input file learning material is in Figure 14.

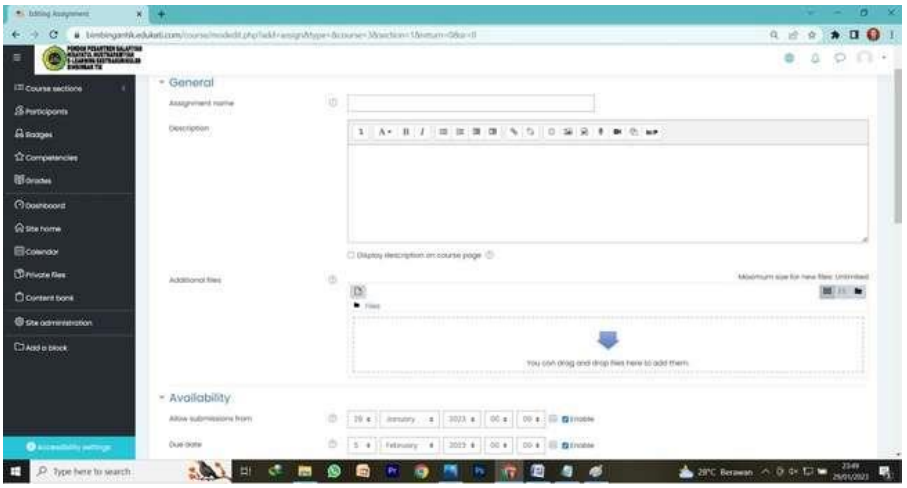


Figure 14. Display Input Learning Material

In Figure 14, we can see that the Input File Display of the learning material is where the admin or teacher enters a file that will be included in the learning activity. Columns are available for learners to complete the name of the activity, description of the activity, and file submission.

Disseminate

At this stage, the researcher carried out an activity of distributing validity questionnaires. They aim to determine whether the e-learning developed was valid for use assisted by learning media expert validators by distributing questionnaires. The questionnaire had 20 statement items. Five statements are about content feasibility, four statements are about graphic components, five statements are about the presentation components, and six questions are about the software for the developed extracurricular e-learning (Radyuli et al., 2022).

Table 1. Questionnaires Distribution for Students

No	Category	Number of Statements	Average Score
1	Content Feasibility	5	4.2
2	Graphic Components	4	3.8
3	Presentation Components	5	4.1
4	Software for E-Learning	6	3.9

The table above shows the categories of the questionnaire, the number of statements in each category, and the average score for each category based on the participants' responses. The scores are on a scale of 1 to 5, with 5 being the highest score.

The results suggest that the content feasibility and presentation components received the highest average scores, while the graphic components had a slightly lower score. The software for the developed extracurricular e-learning received an average score of 3.9, indicating there may be room for improvement in this area. Overall, this chart can provide useful insights into the strengths and weaknesses of the developed extracurricular e-learning product.

After all the steps are completed, the guidebook is disseminated. However, according to the development model used by the researcher, the guidance book must be validated by an expert on media. The following are the expert validator data and validity values obtained in table 2.

Table 2. Media Expert Data Validator on ICT Guidance Extracurricular E-Learning

Validator	Position	Value Validity	Category
Dr. Dedy Irfan, S.Pd, M.Kom	Lecturer FT-UNP	96%	Very worth using
Dr. Hansi Effendi, ST, M.Kom	Lecturer FT-UNP	97%	Very worth using
Menrisal, S.Pd, M.Pd	Vice Dean-UPI "YPTK"	96%	Very worth using

Table 2 shows the validator ratings at 96% and 97% with appropriate categories for use in ICT guidance extracurricular activities. Two validators are lecturers at the Faculty of Engineering, Universitas Negeri Padang, and one validator is the deputy dean of the teaching and education faculty of the Universitas Putra Indonesia "YPTK" Padang who certainly has experience in the field of learning media (Yunus et al., 2020). The validity values are based on the assessment aspect in Table 2.

Table 3. Validity value based on the assessment aspect of ICT Guidance Extracurricular E-Learning

Assessment Aspects	Value	Average value	Category
content eligibility	98,67%	96,42%	Very Valid
Graphic Components	95,00%		
Serving component	98,67%		
Software	93,33%		

In Table 3, we can see that the average value of the validity of ICT guidance e-learning extracurriculars based on the four aspects of the assessment is 96.42%, which is a very valid category for use in ICT guidance extracurricular activities at the PPS Hidayatul Musthafawiyah.Next, the researcher conducted a practicality test on 37 students who joined ICT guidance extracurricular activities by providing a practicality questionnaire with 18 statement items, eight statements based on conditions of use, five statements based on learning time, and five statements based on benefits(Wijaya &Lubis, 2018). The practicality values are based on the three assessment aspects in Table 3. More details can be seen in table 4.

Table 4. Results of Respondents Who Filled Out The Questionnaire**.**

No	Category	Number of Respondents Who Meet the Criteria	Percentage
1	Content Eligibility	36	98,67%
2	Graphic Components	35	95,00%
3	Serving Component	36	98,67%
4	Software	33	93,33%

In the table, four main categories are assessed in the questionnaire: Content Eligibility, Graphic Components, Serving Components, and Software. Each category indicates the percentage of respondents who met the criteria. There is also information about the number of respondents who filled out the questionnaire and the number of statement items for each category assessed.

Table 5. Practicality value based on the assessment aspect of ICT Guidance Extracurricular E-Learning

Assessment Aspects	Value	Average value	Category
State of use	93,11%	92,77%	Very Practical
Study Time	92,97%		
Benefit	92,22%		

In Table 5, we can see that the average value of the practicality of ICT guidance e-learning extracurriculars based on the three aspects of the assessment was 92.77%, which is an efficient category for use in ICT guidance extracurricular activities at the PPS HidayatulMusthafawiyah. Next is an

effective test of 37 students with 20 questions regarding ICT learning to determine their academic value using the developed e-learning(Menrisal et al., 2022). The student effectiveness is in table 5.

The following is data that shows the number of respondents who responded to the questionnaire that has been given.

Table 6. Number of Respondents Who Gave Answers.

No	Category	Number of Respondents Who Meet the Criteria	Percentage
1	State of use	34	93,11%
2	Study Time	35	92,97%
3	Benefit	34	92,22%

In the table, three main categories are assessed in the questionnaire: state of use, Study Time, and Benefit. Each category indicates the percentage of respondents who met the criteria. There is also information about the number of respondents who filled out the questionnaire and the number of questions contained in the questionnaire.

Table 7. Student Effectiveness Value

Question	Effectiveness Value
Q1	100
Q2	100
Q3	100
Q4	97,33
Q5	97,30
Q6	100
Q7	100
Q8	100
Q9	94,59
Q10	94,59
Q11	94,59
Q12	97,30
Q13	100
Q14	97,30
Q15	97,30
Q16	100
Q17	100
Q18	100
Q19	100
Q20	100
Total Effectiveness Value	**1970,27**
Average Effectiveness Score	**98,51%**
Category	**Very effective**

Table 6 shows that the average value of student effectiveness in answering 20 questions adopted from (Krismanto et al., 2020)about ICT Guidance for complementary factors in learning using e-learning was 98.51% in the very effective category used to increase student competency.

4. CONCLUSION

Several conclusions can be drawn based on research that has been done on the development of ICT-guided extracurricular e-learning. First, the development process that has been carried out produces e-learning products that support ICT guidance for complementary activities at PPS HidayatulMusthafawiyah. Second, the validity of the verifier test on e-learning media was 96.42%,

which is very valid. Third, the practicality of e-learning learning media is 92.77%, which is very practical. Fourth, the effectiveness of Website-based e-learning learning media is 98.51%, which is very effective.

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