



Designing e-learning for Mobile Application Development Course using Learning Experience Design (LXD) method

Wahyu Adhi Rendratma ^{a,1*}, Arif Setiawan ^{a,2}

^a Universitas Muhamadiyah Surakarta, Indonesia

¹ a710190002@student.ums.ac.id *; ² arifsetawan@ums.ac.id ;

*corresponding author

Article Information

Article History:

Accepted January 2025

Accepted February 2025

Published February 2025

Keywords:

Website;

E-Learning;

LXD;

Learning;

Technology.

Abstract

ICT has experienced rapid development and has had a very influential and significant impact on various fields and aspects of life, including in the world of education. One application of this technology is through the use of e-learning to support the teaching and learning process. Many educational institutions, both schools and universities, have utilized e-learning, especially during the pandemic which requires activities to be carried out at home. Although most teaching and learning activities and processes are now carried out face-to-face, the e-learning platform is still applied for activities such as exams and other learning activities. WordPress is one of the LMS platforms or open-source learning management systems that can be accessed at no cost, with features that have been provided and prepared that can be adjusted according to what the user needs. The varied model can only be used after being filled with various data from application user information to existing class divisions and subjects. Furthermore, primary data is collected, and the data needs to be processed first so that it matches the system format before it can be entered into the WordPress platform.

How to Cite:

Rendratma, W.A., & Setiawan, A. (2025). Designing e-learning for Mobile Application Development Course using Learning Experience Design (LXD) method. *Jurnal Dimensi Pendidikan dan Pembelajaran Universitas Muhammadiyah Ponorogo*, 13 *Special Issue* (1), pp 217-232.

INTRODUCTION

Information and communication technology (ICT) has developed very rapidly and brought major changes in various aspects of life, one of which is the world of education. By integrating

information technology into the world of education, it is expected to improve the quality and efficiency of education in Indonesia.

Information technology has penetrated all levels of society, students are also affected and are expected to be able to understand technological developments, especially in the world of computers. Although not all students master today's sophisticated technology, some students must have mastered it. The development of this technology will greatly influence the learning process, namely interaction in a learning environment between students and educators to achieve learning goals (Saputra et al., 2019).

Online learning is now becoming more popular as a way to address education and training issues in both developed and developing countries, including Indonesia. Online learning is a term that is often used, but it is learning through electronic services as a tool. E-learning has many meanings, so many experts provide different definitions. According to Khan (2005:3), E-learning can be used for innovative designs to provide interactive, student-centered learning, well-designed to facilitate learning space for everyone, anytime, using materials from various digital technologies throughout the learning process. Following an open and flexible learning environment, Clark and Mayer (2003:13) have another perspective on understanding e-learning. According to several experts, e-learning has several components about what, how, and why. Holmes and Gardner (2006:10) suggest that online learning provides opportunities for educators and students to increase learning and teaching experiences through virtual media that not only support delivery but also support exploration and information application of knowledge. Even though currently most teaching and learning activities are carried out face-to-face, e-learning sites can still be used to hold daily exams or tests that are applied in the existing learning process. (Mutiara Nafysah et al., 2023).

Learning Experience Design (LXD) is a new wave in educational technology and instructional design. LXD is founded on the development of learning design science, focusing on developing students to achieve their learning goals. The focus is on how to improve positive attitudes while creating good experiences with modern technology that adapts and simplifies student needs while ensuring that students can receive information at any time by integrating it directly into the workflow of everyday life for effective learning outcomes. LXD represents a new trend in learning design in the digital era that emerges from the application of interdisciplinary design concepts to develop learning processes for learners. LXD is mostly processed via the internet and relies on digital technology devices. This learning system emphasizes the power of well-designed user experiences, thereby improving the quality of learning (Jahnke et al., 2020; Schmidt & Huang, 2021; Stefaniak et al., 2020).

Current e-learning is not effective for learning because it does not follow the development of new systems, therefore e-learning is needed with a new concept so that it can increase students' interest in learning which will certainly increase achievement. This study chose Learning Experience Design (LXD) because LXD is a new conceptualization for today's e-learning by combining a design theory approach and a learning theory approach through the principles of instructional design. Therefore, with an attractive design concept and complex material, LXD can be a solution to this problem (Batoufflet, 2019).

The Mobile Application Development course itself is a course that focuses on creating functional applications on the Android or iOS platform with the use of relevant programming such as Java and Swift. Therefore, this research is deemed necessary to increase students' interest in learning in the Mobile Application Development course.

LITERATURE REVIEW

Relevant Research

Based on research conducted by Rohmad Wahid Rhomdani (2016), he created a dynamic, interactive, and practical WordPress website by developing a digital learning management system at the University of Muhammadiyah Jember. This virtual class is very helpful for teachers to implement learning and make it easier to evaluate student performance. Just click on the value, and teachers and students will immediately know the test scores they have just taken. This website is also equipped with a question validity analysis system or assessment. This website increases students' enthusiasm for learning, with online exams students become enthusiastic about working so that they increase their grades by studying harder.

In a study conducted by Sherly Kalatting, Vina Serevina & I Made Astra (2015) it was shown that because learning media with a web model that uses the Guided Discovery Learning approach is full of interactive content that does not make students bored, it is recommended to increase students' interest in learning.

In a study conducted by Saluky (2016), it was shown that Mathematics teaching materials using WordPress were successfully applied to grade X students with an average score of 80 while the applicable KKM was only 75, which means the average is above the school's KKM. This shows that student's interest in learning after the teaching materials using WordPress increased.

In a study conducted by Yiannis Georgiou, Olia Tsivitanidou¹, and Andri Ioannou (2021), the effectiveness of VR-based learning media using the LX concept also increased students' understanding of physics material. By using LX, learning is more neatly organized because everything from participants to methods is considered through the LX canvas, thus minimizing students' lack of understanding due to incorrect learning strategies.

Table 1. Comparative Research

No	Previous Research	Media in the learning process
1	The Greatest Showman (2016)	Developing a website-based virtual class
2	Sherly Kalatting, Vina Serevina & I Made Astra (2015)	Developing a website with a Guided Discovery Learning approach
3	Saluky (2016)	Developing teaching materials using WordPress
4	Yiannis Georgiou, Olia Tsivitanidou ¹ , Andri Ioannou (2021)	Developing VR learning media with the LX concept

Based on table 1, states that the use of learning media in the form of a website can be applied to the ongoing learning process. However, currently, there are not many studies that use the LX concept on their websites. Therefore, this study focuses on the preparation of e-learning Mobile Application Development using the LX concept as a variation of interactive teaching strategies that can increase student learning motivation.

Theoretical review

Instructional Media

Learning media is a tool used by an educator during the teaching process to help influence the atmosphere, conditions, and learning environment. Its use at the educational teaching stage can increase the effectiveness of the learning process and message delivery. In addition, learning resources can increase motivation and interest in learning, understanding, and presenting data interestingly and reliably, making it easier for students to interpret data and condense information. (Muammar & Suhartina, 2018).

E-learning

E-learning is a learning model that applies electronic devices, especially computers, to facilitate the learning process. This is a communication and data technology that makes it possible for students to learn without knowing the place and time to be able to do it. Using e-learning is more interactive and effective for learning because it provides higher opportunities for students to interact with lecturers and colleagues and access more learning materials. (Hartanto, 2016).

Learning Experience Design (LXD)

Learning Experience Design (LXD) is a new wave in educational technology and instructional design. Learning Experience Design (LXD) is the practical process of designing engaging learning experiences, tailored to the needs and preferences of the target audience, that encourage the acquisition and retention of knowledge and skills. LXD combines design principles and elements, including instructional design, multimedia, interaction, and user experience, to create effective and enjoyable learning experiences (Warakon, Boonrat, & Sutitthep, 2023)

Developed Product Specifications

The final result that will be developed in this study is an e-learning website with the LXD concept for learning the Mobile Application Development course that can be used by educators as a learning medium that can facilitate the delivery of materials. So that it is expected that students will not have difficulty in understanding and comprehending the explanation of the material that has been given and explained. This product is made using a WordPress website that can be accessed on laptops or smartphones.

Framework of Thinking

During the COVID-19 pandemic, students started learning online using electronic devices. So students are used to using electronic devices as a tool to access materials. E-learning has increased students' interest in learning compared to books, etc. However, e-learning currently does not follow many new learning concept developments. Therefore, researchers will develop e-learning with LXD conceptualization containing Mobile Application Development material

METHOD

The Research and Development (R&D) method is used in this study. Hanafi's research, (2017) said that the R&D method is a process of developing and validating a product that is used.

Development Model

This study applies the 4D model development model (define, design, develop, disseminate). The 4D model has 4 steps shown in Figure 3, the first define is to conduct a needs analysis required from the results of the journal literature review to explore the information needed. The second design is the design process (learning media). The third development is the stage of producing products that have been developed through expert appraisal and developmental testing. The fourth dissemination is the final stage of the product that has been developed can be accepted by users.

Development Procedure

Product Development

Steps in developing research products:

1. Development Design



Figure 1. LX Canvas

For the development design, this media uses the concept of LXD canvas as in Figure 1. which contains a learning design that has been arranged in such a way according to the concept in LXD. With the following description:

- | | |
|------------------------------------|--|
| Learning Insight: CPMK | Location: Learning location |
| Learning Objectives: Sub-CPMK | Contraindications: Problems |
| People: Students | Resources: Source materials |
| Characteristic: Learning character | Activity: Learning activities |
| Strategy: Learning strategy | Process: Sequence of material delivery |
| Environment: Space facilities | |

2. Development Subject

The subjects of development in this study were 30 6th semester students of the Mobile Application Development Course in the Informatics Engineering Education Study Program.

3. Data and Data Sources

a. Primary data

Researchers obtained data from literature reviews of various relevant articles/journals.

b. Secondary data

Researchers obtain data from books that are relevant to what the researcher is doing.

4. Data collection technique

The data collection technique used by researchers is through observation, which will be carried out by trying the product and using a questionnaire sheet to determine the feasibility of the website.

5. Data Analysis Techniques

Qualitative descriptive is used by researchers in analyzing data taken based on the results obtained after researchers conducted observations to determine the media being developed.

Product Trial

1. Trial Design

E-learning media using LXD will be tested on material and media professionals to test the suitability of the product before being implemented on students.

2. Test Subject

a. Subject matter expert

Lecturer of Informatics Engineering Education, Muhammadiyah University of Surakarta who will conduct a product trial to determine the feasibility of the product in terms of design, material, and exercises contained.

b. Media expert

Media experts will review the feasibility of the product that has been developed and provide criticism and suggestions for improving the system that has been created. Comments from media experts will be used as a reference for improving the system.

3. Data types

The type of data that will be used is a questionnaire that will be filled out by 30 Informatics Engineering Education Study Program students, in semester 6.

4. Data Techniques and Instruments

There are three data collection techniques used, namely: (1) interviews, (2) observations, and (3) questionnaires to material and media professionals.

Table 2. Media Professional instrument grid

No	Rated aspect	Assessment level			
		1	2	3	4
A		Ease of Use and Navigation Aspects			
1.	Learning media can be operated easily				
2.	Media can be accessed easily				
3.	Easy-to-understand website				
B		Visual Display			
1.	The attractiveness of the appearance of the learning media design				
2.	Neatness of menu layout on media				
3.	Neatness of text, images and content presented				
4.	The choice of colors used is interesting				
5.	The text is readable				
6.	The balance of the proportions of the images used is appropriate				
B		Media Integration			
1.	Navigation button reaction speed when touched				
2.	Presentation of images that support the content of the material				
C		Benefits of Media			
1.	Media can foster students' curiosity				
2.	Media can help students in learning				
3.	Media can be used anywhere without having to think about time and place (flexible)				

Table 2 contains several statements that reflect the assessment on a value scale, namely 1 (Less), 2 (Enough), 3 (Good), and 4 (Very good). This instrument is designed by

considering several aspects in the development of learning media and serves as a guide to determine whether the media is suitable or not for use.

Table 3. Material Expert Instrument Grid

No	Rated aspect	Assessment level			
		1	2	3	4
A	Content suitability				
1.	Compliance of material with SK and KD				
2.	Accuracy of Material				
3.	Learning material support				
4.	Update of Material				
	Presentation Eligibility				
1	Presentation Techniques				
2	Presentation Support				
3	Presentation of Learning				
4	Serving Equipment				
	Language Assessment				
1	Straightforward				
2	Communicative				
3	Dialogic and Interactive				
4	Suitability to the level of development of the students				

Table 3 contains several statements that reflect the assessment on a value scale, namely 1 (Less), 2 (Enough), 3 (Good), and 4 (Very Good). This instrument is designed by considering several aspects in the development of learning media and serves as a guide to determine whether the media is suitable or not for use.

5. Data Analysis Techniques

The technique used is a qualitative descriptive analysis method, where all data collected is the result of research, suggestions, input, and evaluation from media experts and basic programming teachers as material experts.

a. Product Rating

1) Experimental design

The experimental design aims to determine the level of student satisfaction in using media in learning. This experiment was conducted on students of the Informatics Engineering Education study program who had tried the researcher's product, namely e-learning learning media using LXD in the Mobile Application Development course.

2) Experimental subjects

The experimental subjects used in this experiment were 30 students of the Informatics Engineering Education study program.

3) Data types

The type of data that will be used is quantitative data using pre-tests and post-tests conducted on 26 students of the PTI UMS Study Program.

RESULTS AND DISCUSSION

This learning media is built to make it easier for students to increase the interactivity and effectiveness of learning interest in understanding Mobile Application Development material.

This learning media is created using the WordPress website, which is a website-based website creation tool. This website contains Mobile Application Development material. This learning media contains an evaluation in the form of a quiz to measure students' understanding of the material.

The target of this Exlearn learning media is students of the Informatics Engineering Education Study Program at Muhammadiyah University of Surakarta (UMS). Media expert professionals, namely two lecturers from the UMS PTI Study Program, have tested the media that will be applied to students. The learning media is tested and evaluated first by a professional in media and materials. After being tested and evaluated by the developer, this learning media is then applied to students of the Informatics Engineering Education Study Program.

Data collection from users (students), media professionals, and materials using questionnaires that are filled out and then processed to determine the feasibility of the applied learning media. Evaluation of learning media is the result of suggestions and input provided by media experts and material experts. This research uses the 4D model development (define, design, develop, and disseminate).

Define (Definition)

In this define step there are two steps, namely initial analysis and concept analysis.

Initial Analysis

At this stage, the goal is to identify the main problems related to time in the learning process, as well as to find out the existing teaching materials that need further development. The analysis was carried out by conducting interviews with lecturers in charge of the Mobile Application Development course at the UMS PTI Study Program. Based on the results of the interviews that have been carried out by the researcher, it can be seen that there is no e-learning using the LXD concept used in the learning process.

Concept Analysis

At this stage, the activities carried out are interviewing educators to identify the main concepts taught.

Design (Design), After the define stage, the researcher then carries out the design or planning stage to be able to provide the desired results.

Develop (Development), After the design stage, the researcher then carried out the development stage with the following results:

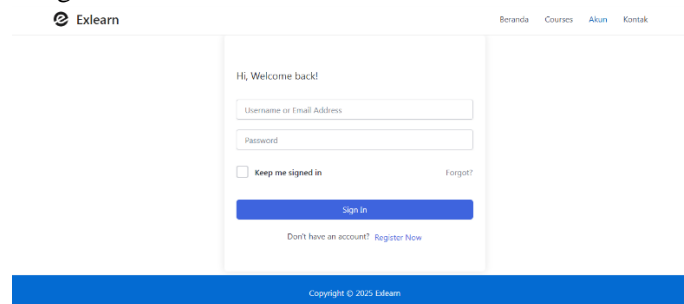


Figure 2. Login Page

Figure 2 shows the login page, this login page functions as the initial gateway to enter the Exlearn learning media for students who do not have an account, they can register first.

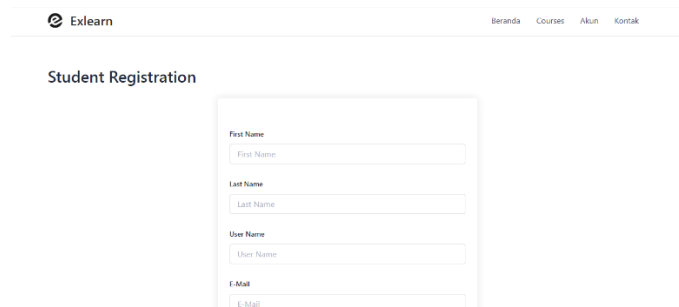


Figure 3. Register Page

Figure 3 shows the register page, the page functions to create an account for students who do not have an account on the exlearn website. Students who do not have an account can immediately register for free by entering some identities such as first name, last name, email, and of course password.



Figure 4. Home Page

In Figure 4, the web displays the home page when students enter the e-learning exlearn website. The home page contains some information related to the learned web such as lecturer information, certificate information, etc.

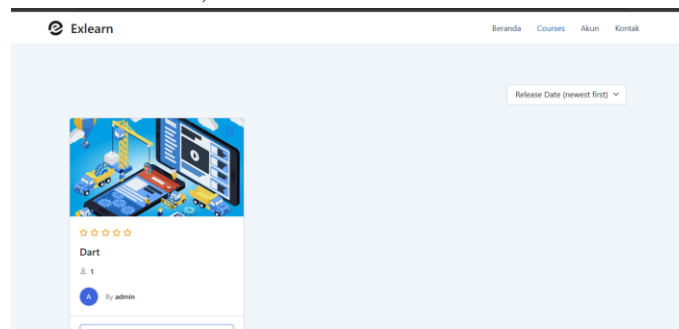


Figure 5. Course Page

Next, in Figure 5, we move on to the course page, where the course page contains the courses on the Exlearn website, which can later be added to the course title and can be enrolled according to student needs because for now there is only material from the mobile application development course.

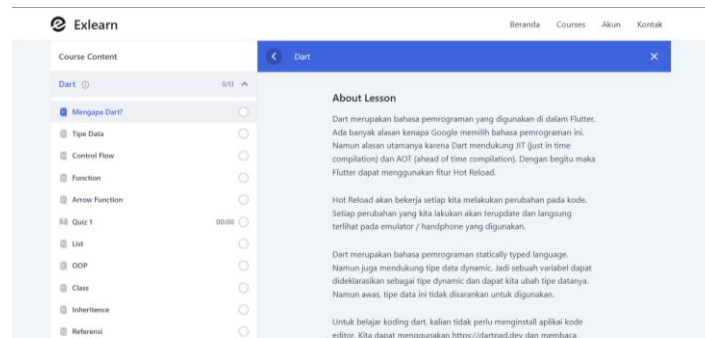


Figure 6. Front Page

After we were on the front page of the course page, now we entered the course or material page that appears in Figure 6. This material page contains the material in the dart course. The content is also complete, there is material content and tests that can be accessed directly by students and the test is made using multiple choice questions so that it is easy for students to work on the test directly on the web and the score will appear immediately.

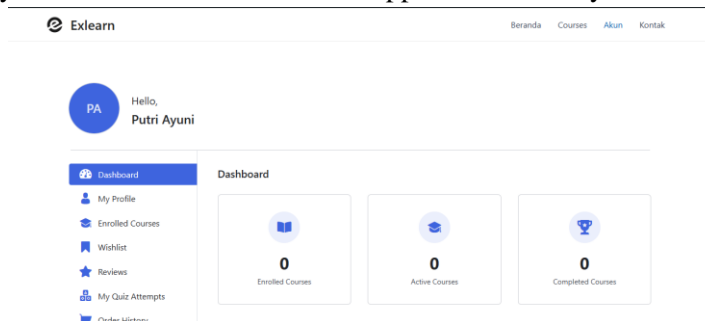


Figure 7. Account Page

In Figure 7 we enter the account page, which contains a lot of information about students such as profiles, enrolled courses, whistlerlists, etc. Of course, this will make it very easy for students to monitor their accounts, both for their information or information about their learning progress.

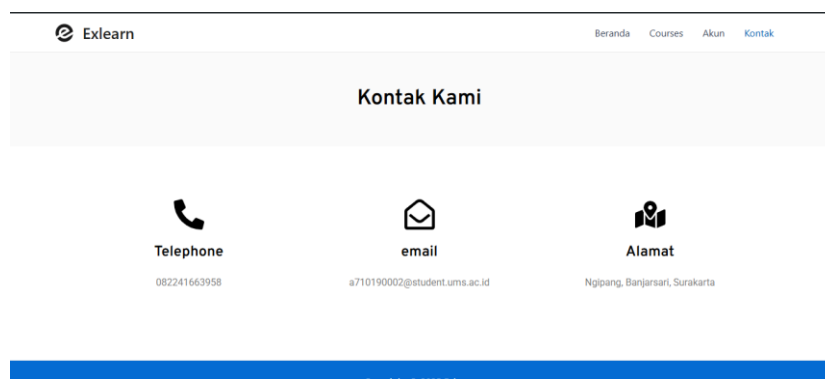


Figure 8. Web Contact

On this last page, there is a web contact page as shown in Figure 8. This page contains contacts that can be contacted by students who encounter problems with the e-learning website, who can later provide solutions to the problems faced by students.

Disseminate (Spread)

Disseminate in this stage is the final stage where the multimedia product that has been developed is distributed to end users or students. At this stage, the product is distributed via Google Drive. This stage also includes feedback from users using the User Experience

Questionnaire (UEQ) method. The UEQ questionnaire was created and distributed on paper media to speed up the distribution process and make it easier for researchers to collect data. Based on the study, UEQ has good validity and reliability, as measured by the Cronbach Alpha index, and can show quite high values. The following are the questionnaire questions that have been created by the researcher:

Figure 9. UEQ Image

Data Analysis

The data analysis process is carried out by calculating the average value of all aspects measured. Each item in the questionnaire has a positive and negative value on a scale of 1 to 7, which is then converted into a range of -3 to +3. If the value obtained is in the range of +1 to +2, then the results are considered to have good quality [17]. The assessment standards in UEQ are set as follows: values below -0.8 are categorized as negative, values between -0.8 to 0.8 are considered neutral, and values above 0.8 are included in the positive category. In addition, a benchmark test is carried out to contrast the results on each aspect that refers to the UEQ Data Analysis Tool. The results of this benchmark test are grouped into five categories: Bad, Below Average, Average, Above Average, Good, and Excellent. In analyzing data with UEQ, the collected data is imported into the analysis tool via the data menu. The steps for using the UEQ Data Analysis Tool are:

Data Conversion

At this point, the data from the respondents are converted into a scale from negative to positive. However, the data conversion is not sequential for each item, so that the data does not fluctuate. All scale conversions are shown in Figure 10 as follows:

Konversi Data

1	→	-3
2	→	-2
3	→	-1
4	→	0
5	→	1
6	→	2
7	→	3

Figure 10. Table Data Conversion

The result of the conversion will consist of the average value on the individual scales arranged according to each element. The following is the formula used to convert this data:

$$\bar{x} = \frac{\sum \bar{x} [\text{person}]}{\sum \text{item}} \dots \dots \dots (1)$$

Information:

\bar{x} = mean individual scale

$\sum \bar{x}$ [person] = total scale items

$\sum item$ = number of items per scale

Key Results

At this stage, the converted data is then calculated to produce results. The main result of this UEQ is the result used as a benchmark for benchmark calculations. The overall scale and assumptions are calculated using the variance and average values of the conversion process. Values ranging from -0.8 to 0.8 are considered neutral, values below -0.8 are considered negative, and values above 0.8 are considered positive. These values are used to determine the assessment.

Result Calculation:

$$\bar{x} = \frac{\sum \bar{x} [skala]}{\sum item} \dots\dots\dots(2)$$

Information:

\bar{x} = rata-rata skala perorangan

$\sum \bar{x} [skala]$ = total item perskala

$\sum item$ = total responde

Benchmark Data

UEQ uses benchmark standards to evaluate and compare the quality of a product. The results of the analysis of the data obtained are used to determine the comparative value. Information on benchmark values can be seen in Figure 11 below:

No	Aspek	Excel lent	Kategori			
			Go od	Abo ve Aver age	Belo w Aver age	Ba d
1	Daya Tarik	0,66	0,2 6	0,4	0,49	0, 69
2	Kejela san	0,5	0,2 7	0,53	0,48	0, 72
3	Efisie nsi	0,62	0,3 8	0,45	0,45	0, 6
4	Ketep atan	0,8	0,2 2	0,34	0,36	0, 78
5	Stimu lasi	0,8	0,3 5	0,35	0,5	0, 5
6	Kebar uan	0,9	0,4 8	0,42	0,54	0, 16

Figure 11. Table Data Benchmark

Average (Mean) UEQ measurement results

The average measurement result of UEQ (User Experience Questionnaire) is an important indicator in evaluating the user experience of a product or system. UEQ measures aspects such as attractiveness, clarity, efficiency, stimulation, reliability, and control through many questions that assess user perceptions. By calculating the average score of each aspect, we can get a comprehensive picture of how users feel about their interaction with the product or system being tested. This average score provides useful insights for developers or designers to understand the strengths and weaknesses in user experience, which can be used for future product quality improvement and enhancement. The following is the average measurement result of UEQ on the website game that has been created as seen in Figure 12 below:

Item	Mean	Variance	Std. Dev.	No.	Left	Right	Scale
1	1,6	1,9	1,4	255	annoying	enjoyable	Attractiveness
2	1,9	1,7	1,3	255	not understandable	understandable	Perspicuity
3	0,8	2,3	1,5	255	creative	dull	Novelty
4	1,5	2,7	1,6	255	easy to learn	difficult to learn	Perspicuity
5	1,5	2,2	1,5	255	valuable	inferior	Stimulation
6	1,0	1,7	1,3	255	boring	exciting	Stimulation
7	1,2	1,9	1,4	255	not interesting	interesting	Stimulation
8	0,6	1,8	1,3	255	unpredictable	predictable	Dependability
9	1,4	1,8	1,3	255	fast	slow	Efficiency
10	0,8	2,2	1,5	255	inventive	conventional	Novelty
11	1,0	1,8	1,3	255	obstructive	supportive	Dependability
12	1,7	2,1	1,4	255	good	bad	Attractiveness
13	1,5	2,0	1,4	255	complicated	easy	Perspicuity
14	1,4	2,1	1,4	255	unlikable	pleasing	Attractiveness
15	0,8	2,1	1,5	255	usual	leading edge	Novelty
16	1,5	1,9	1,4	255	unpleasant	pleasant	Attractiveness
17	1,6	2,1	1,5	255	secure	not secure	Dependability
18	0,8	1,7	1,3	255	motivating	demotivating	Stimulation
19	1,7	1,9	1,4	255	meets expectations	does not meet expectations	Dependability
20	1,7	1,8	1,3	255	inefficient	efficient	Efficiency
21	1,7	1,9	1,4	255	clear	confusing	Perspicuity
24	1,9	1,2	1,1	255	impractical	practical	Efficiency
23	1,3	2,6	1,6	255	organized	cluttered	Efficiency
24	1,2	1,8	1,3	255	attractive	unattractive	Attractiveness
25	1,5	1,8	1,3	255	friendly	unfriendly	Attractiveness
26	0,7	2,2	1,5	255	conservative	innovative	Novelty

Figure 12. Average Measurement Result of UEQ on The Website Game

Figure 12 shows the results of the mean, variance, and standard deviation after the data is converted. Each item is given a color according to the relevant aspect, then the calculation is performed on all aspects that can be seen in Table 4 below:

Table 4. The Mean Impression And Variance of The Scale

UEQ Scales (Mean and Variance)		
Daya Tarik	2,600	0,10
Kejelasan	2,500	0,18
Efisiensi	1,770	0,11
Ketepatan	1,620	0,19
Stimulasi	2,500	0,14
Kebaruan	2,370	0,21

Table 4 shows the mean impression and variance of the scale. In UEQ to assessment, it is determined based on the following standards: if the value is below -0.8 then it is considered negative; if the value is between -0.8 to 0.8, it is considered neutral; and if the value is above 0.8, it is considered positive.

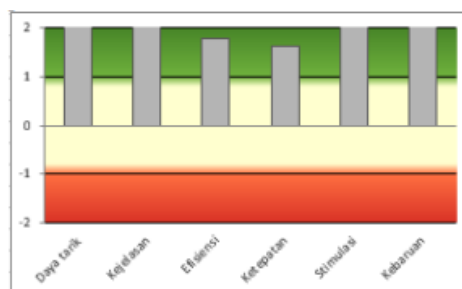


Figure 13. UEQ scale values

Figure 13 shows the UEQ scale values obtained from 25 respondents who filled out the User Experience Questionnaire (UEQ) on the exlearn website. All aspects of user experience measurement, including Attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty managed to obtain a mean above 0.8, indicating a positive evaluation and displayed in the green area.

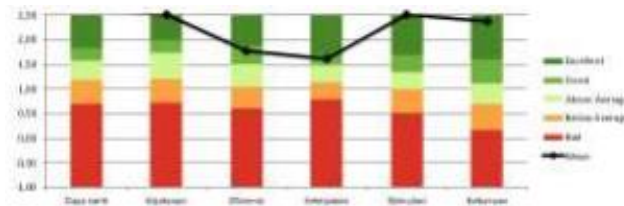


Figure 14. Results of The Benchmark Process Using The UEQ Data Analysis Tool

After obtaining the average value (mean) for each variable, the next step is to compare the existing mean with the benchmark data set. This comparison aims to assess the relative quality of the exlearn website compared to other products. Table 3.6.5 shows the results of the benchmark process using the UEQ Data Analysis Tool.

No	Scale	Mean	Comparison to benchmark	Interpretation
1.	Daya Tarik	2,60	Excellent	In the range of the 10% best of result
2.	Kejelasan	2,50	Excellent	In the range of the 10% best of result
3.	Efisien	1,77	Good	10% of result better, 75% of result worse
4.	Keterampilan	1,62	Good	10% of result better, 75% of result worse
5.	Stimulasi	2,50	Excellent	In the range of the 10% best result
6.	Kebaruan	2,37	Excellent	In the range of the 10% best result

Figure 15. Table Benchmark Data Set Results

Figure 15. Table Benchmark Data Set Results Based on Figure 15, it can be seen that when compared to other products, the exlearn website obtained above-average scores in all aspects. These results indicate that the learned website has very good quality. The conclusion obtained from data processing involving 25 respondents using descriptive statistics on each attribute that measures user experience with UEQ, shows that the learned website obtained positive ratings in all aspects, namely attractiveness (mean 2.60), perspicuity (mean 2.50), efficiency (mean 0.11), dependability (mean 1.77), stimulation (mean 2.50), and novelty (mean 2.37). This study concludes that the user experience on the exlearn website, based on the UEQ results, shows satisfactory results, so this website is very suitable to be distributed to students to make learning more innovative and interactive.

CONCLUSION

This study began with the need to increase student interactivity and engagement in mobile application development learning. Traditional theoretical approaches are considered less effective in motivating students and developing their practical skills. Therefore, this study aims to develop innovative learning media, namely blended learning using e-learning websites that support the learning process more interactively and applicatively. The research method chosen is 4D (define, design, develop, disseminate). In the development stage, the main tool used is the WordPress web builder to design the website. Media and supporting features are integrated to create an interesting

learning experience. The developed e-learning successfully provides an interactive learning experience with educationally designed features. The trial was conducted through observation, interviews, and questionnaires with lecturers and students, which showed that this media increased motivation, practical skills, and students' understanding of mobile application development materials. Analysis based on the User Experience Questionnaire (UEQ) showed that this website had high scores in the aspects of attractiveness, clarity, efficiency, accuracy, stimulation, and novelty, with all average scores in the positive category. Benchmark tests show that this website is included in the "Excellent" category in most aspects, indicating that its quality is very good compared to other learning media. This study proves that website-based learning media can be an effective alternative in improving the quality of technical learning, especially for competencies in mobile application development courses. This website not only improves learning outcomes but also enriches interactive learning methods. With positive results, this website is recommended for wider adoption to support technology-based learning processes.

REFERENCE

- Ambiro Puji Asmaroini (2023). Use of Mobile-Based LMS Using Design Thinking in Pancasila Courses. *Journal of Dimensions of Education and Learning*, Vol 11 No 1 (2023).
- Benedek, A. (2015). MindTheGapp™ Between standards and practices of mobile learning experience design. *International Journal on Advances in Education Research*, 2(1), 14-36.
- Erwin Januarisman & Anik Ghufron. (2016). Development of Web-Based Learning Media for Natural Science Subjects for Grade VII Students. *Journal of Educational Technology Innovation*. Volume 3, No 2.
- Fitri, AN, Pertiwi, LB, & Sary, MP (2021). The influence of social media TikTok on the creativity of communication science students at Jakarta State University, batch 2019. *Komuniti: Journal of Communication and Information Technology*, 13(1), 37-46.
- Hartanto, W. (2016). The Use of E-Learning as a Learning Medium. *Journal of Economic Education*, 10(1), 1–18.
- Kusuma, RS (2017). Internet usage by lecturers based on gender and generation. *Komuniti: Journal of Communication and Information Technology*, 8(1), 53-63.
- Muammar, M., & Suhartina, S. (2018). Information Technology-Based Learning Media in Increasing Interest in Learning Aqidah and Akhlak. *KURIOSITY: Social and Religious Communication Media*, 11(2), 176–188. <https://doi.org/10.35905/kur.v11i2.728>.
- Mutiara Nafysah Eka Angga Laksana (2023). Design and Construction of Educational Technology Based on Moodle and Private Cloud at SMAN 26 Bandung. *Journal of Educational and Learning Dimensions*, Vol 11 No 2 (2023).
- Rhomdani, RW (2016). Development of web-based virtual mathematics class using moodle and wordpress at Muhammadiyah University of Jember. *Gammath: Scientific Journal of Mathematics Education Study Program*, 1(1).
- Rossa Ayuni, Meti Herlina (2021). Blended Learning Model to Facilitate Students' Understanding Skills in Taxation Courses. *Journal of Educational and Learning Dimensions*, Vol 9 No 2 (2021).

- Saluky, S. (2016). Development of Web-Based Mathematics Teaching Materials Using Wordpress. *Eduma: Mathematics Education Learning and Teaching*, 5(1).
- Santiana, S., Silvani, D., & Ruslan, R. (2021). Optimizing LMS CANVAS for interactive online learning perceived by the students. *Journal of English Education and Teaching*, 5(4), 529-543.
- Santoso, S. (2021). Analysis of audience reception of Meiliana case news in online media. *Komuniti: Journal of Communication and Information Technology*, 12(2), 140-154.
- Saputra, EA, Wakhinuddin, W., & Rizal, F. (2019). Development of Problem-Based Electronic Learning Media in Basic Computer and Network Subjects. *Journal of Vocational Technology Education*, 2(2), 39–44. <https://doi.org/10.24036/jptk.v2i2.5023>.
- Schmidt, M., & Huang, R. (2022). Defining learning experience design: Voices from the field of learning design & technology. *TechTrends*, 66(2), 141-158.
- Sedyono, E., Hasibuan, ZA, Setyawan, I., Harahap, EP, & Darmawan, A. (2022). Training on the use of e-learning websites as online learning media with a content management system. *ADI Community Service*, 3 (1), 64-73.
- Sherly Kalatting, Vina Serevina & Made Astra. (2015). Development of Web-Based Physics Learning Media Using Guided Discovery Learning Approach. *JPPPF - Journal of Physics Education Research & Development*. Volume 1.
- Tawfik, A.A., Gatewood, J., Gish-Lieberman, J.J., & Hampton, A.J. (2022). Toward a definition of learning experience design. *Technology, Knowledge and Learning*, 1-26.
- Unique Hanifah Salsabila et al (2023). Utilization of Technology in Post-Pandemic Education. *Journal of Educational and Learning Dimensions*, Vol 11 No 1 (2023).
- Warakon, Boonrat, & Sutitthep (2023). A systematic review of changing conceptual to practice in learning experience design: Text mining and bibliometric analysis. *Contemporary Educational Technology*, 2023, 15(4), ep453
- Wong, J. T., & Hughes, B. S. (2022). Leveraging learning experience design: digital media approaches to influence motivational traits that support student learning behaviors in undergraduate online courses. *Journal of Computing in Higher Education*, 1-38.
- Yiannis Georgiou, Olia Tsivitanidou¹, Andri Ioannou (2021) Learning Experience Design With Immersive Virtual Reality in Physics Education. *Education Tech Research Dev* (2021) 69:3051–3080
- Zulkifli N, Handy Ferdiansyah (2023). The Effect of Website Utilization in Online Marketing Lessons to Increase Student Learning Motivation at SMKN 2 Sidrap. *Journal of Dimensions of Education and Learning*, Vol 11 No 1 (2023).