Mobile Learning With Discord Application as Creative Teaching

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Abstract – **Teacher creativity in teaching using technology such as mobile learning has been widely applied in developed countries, because it is a 21st century skill. However, only a few lecturers in developing countries, such as Indonesia, are incorporating mobile learning with technological tools, like the Discord application, to create a stimulating and interactive learning experience for their students. For data collection, a questionnaire comprising 26 questions with 6 scales was used. The questionnaire was sourced from www.ueq-online.org, and the data collected from the study were carefully analyzed and examined to extract valuable insights and finding. s. The results showed 6 user experience scales, namely attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty. The results were, on average and very good categories since mobile learning with Discord platform can foster a creative and enjoyable experience for lecturers and students. Furthermore, the study found that lecturers effectively engaged in learning interactions, assigned tasks, and fostered students' creative competence with the support of facilities and new technological equipment.**

Keywords – **Creative learning, Creative Teaching, Discord application, Mobile learning, User experience.**

1. Introduction

The development of creativity is crucial in fostering the growth and acquisition of skills essential in the 21st century. It is widely recognized as a fundamental component of the core thinking skills that support creative individuals [1]. Promoting creative thinking is integral to 21st century skills [1], and the ability to solve problems is increasingly essential in current society [2]. The concept is rooted in the relationship between education and creativity [3], encompassing both the creative and learning processes [4]. Therefore, creative learning plays a vital role in supporting educational attainment and fostering learning at all levels of education [5].

However, only a few lecturers are utilizing creative teaching methodologies and incorporating mobile learning applications that can create an engaging and enjoyable learning experience for students, particularly in Indonesia. Ample opportunities and effective approaches are available for lecturers to employ mobile learning (ML) using Discord application. Students favor Discord for its attractive user interface, comprehensive features, and ease of use [6]. The application facilitates real-time and asynchronous interaction between lecturers and students, allowing permanent text messages to be accessed [7]. Furthermore, the availability of mobile devices for students' daily activities enable the use of smartphones to support online learning interactions [8].

Teaching with learning models is commonly conducted in traditional classroom settings or through online and blended learning using mobile devices [9], [10], flipped learning models [11], and mobile learning with social media [12], [13], [14]. These models enable lecturers to integrate the capabilities and advantages of mobile learning with creative teaching methodologies, creating a fun and engaging environment for students. This approach can cultivate the effective use of technology and learning media in the classroom.

The efficacy of lecturers who incorporate creativity in their teaching has been extensively supported by many research [15] to demonstrate the benefits of creating a dynamic and stimulating school environment. By promoting creativity in learning, students can generate novel insights and develop effective problem-solving skills that support active learning and mental representation of new material [16]. Lecturers must model pedagogical practices [17], and facilitate students' creativity to design and foster creative learning environments [18]. It is important to note that all students have the potential for creativity, regardless of their level of intelligence or giftedness [19]. Moreover, established criteria for measuring creativity in learning have been developed and should be utilized, and creative activities can take many forms and need to be promoted [20].

Conventional teaching methods that rely exclusively on lecturers' strengths and do not integrate media or technology often lead to disengaged students and passive class conditions [21], [22]. Therefore, lecturers adopt Discord application to incorporate creativity in their teaching, which is user-friendly on mobile devices and well-suited for online learning [23]. Discord has since been adapted to support online learning while originally designed for communication between user and interaction with YouTube. It offers unique features such as permanent text and video capabilities and creates an environment resembling a physical classroom [6].

Students who study with technology and learn creatively, demonstrate their ability to design, validate and test competency development materials creatively made with new technological facilities and equipment. Students can present the results of their new creations in class through mobile learning with Discord application. Therefore, this supports research on mobile use by experimenting with making creativity learning through mobile devices.

This research is based on the importance of student creativity and shaping creative learning in class. However, no research has been conducted on Discord application, which is a mobile learning application for technology courses and learning media for prospective teacher students. This support is because the application is popular among young people and YouTube user worldwide. It has been recommended that Discord application should be used by teachers teaching online subjects [24]. Therefore, this recent research addressed the key question of analyzing the user experience of mobile learning with Discord. An analysis was also conducted on user experience using online instruments from ueq.online.org [25], [26].

1.1. Creative Teaching with Fun Application for Students

Technological advancements are frequently utilized to create a comfortable classroom atmosphere that effectively achieves learning objectives. Technology can also facilitate creative learning, characterized by the capacity to stimulate imagination and generate new ideas. It is the responsibility of the lecturers to provide a conducive classroom environment that fosters creative learning [27]. Can be modified to enhance creativity, such as the flexible use of space and time, availability of appropriate materials, and external activities that promote the development of creative skills among students with creative learning Environments.

Meanwhile, creating digital videos can support creative teaching and meaningful learning. In an essay entitled "Studio Thinking: A Model of Artistic Mind: The Role of New Technology in Creative Learning", shows the role and current policy perspectives on creativity in education. Therefore, creating a learning environment that is not only interesting and engaging but also provides a lot of inspiration for new ideas is indispensable. Students can develop the creative ability to create audio-visual media and produce new products that reflect their creativity using this method [28], [29]. Since art plays a role in developing creativity, particularly in processing visual and audio-visual media, practical tools are available to design a learning environment that supports students' creativity.

1.2. Mobile Learning that Supports Creative Learning

Learning facilities have adopted various technologies to support the learning process, create new experiences and make learning fun and creative. Media and mobile devices are among these technologies that have been utilized, and they have proven to be effective in enhancing the learning experience. In particular, mobile technology has several advantages as a valuable tool in the learning process [30]. Research showed that these devices can bridge the gap between learning using websites and mobile technology [31]. Moreover, mobile learning has been examined regarding its acceptability, convenience, and user behavior [32].

Furthermore, there are several studies that show support for the use of mobile learning. Using this mobile learning model there has been increased user support [33]. Mobile technology has been used in various learning activities, such as Massive Open Online Courses (MOOCs) [34], and has been developed with applications that support cooperative and interactive learning [35].

It is particularly useful for distance and creative learning and can improve the quality of work, habits, and access to content [36]. Many students already use mobile learning, and research on cross-cultural influences on usage in higher education has been conducted [37]. Strong evidence suggests that this technology can transform learning, with 54% of students using mobile devices to enhance their experience [38]. Mobile learning has been introduced to overcome challenges and to support schools with e-learning [39]. Overall, a wealth of literature supports mobile technology in student learning, making it an important medium and resource for modern education.

1.3. Discord Application for Learning

Learning with new technology from mobile devices, has convenience and usability that helps students in learning, whatever application is adopted for learning. Most students can easily access and use the application since they have mobile devices. Discord has been adapted for educational purposes and has proven to be an efficient and free application [24]. It has been used in sport lessons and positively impacted students' ability, suitability, and satisfaction with their learning experiences [40].

One of the advantages of Discord application is its ease of use and practicality, particularly on smartphones, due to its small size. It also has a voice channel feature that allows for interaction through voice, making it suitable for lectures and laboratory classes [41]. The fixed text feature, video, and voice facilities provide an environment similar to a physical classroom [6]. As a result, Discord has even been converted into an e-learning tool at universities [42]. The application is particularly appealing for online learning, as it can increase student interest and provide opportunities to play an active role in the process. It has also been shown to boost motivation through the teacher's attitude toward learning [43]. Furthermore, the application is suitable for practical learning activities, such as speeches and presentations in language classes [44]. Given the existing literature, further research on fun learning experiences can be conducted.

2. Method

This research was conducted using instruments and quantitative data analysis that have been effective and the validation is clearly connected.

2.1. Research Design

Quantitative research is applied to measure user experience using a scale from UEQ-online with a design to determine attractiveness is a pure valence dimension. Furthermore, Perspicuity, Efficiency, and Dependability are pragmatic (goal-directed) quality aspects, while stimulation and novelty are hedonic (not goal-directed) quality aspects. This research adapts a design that can test user experience according to Figure 1:
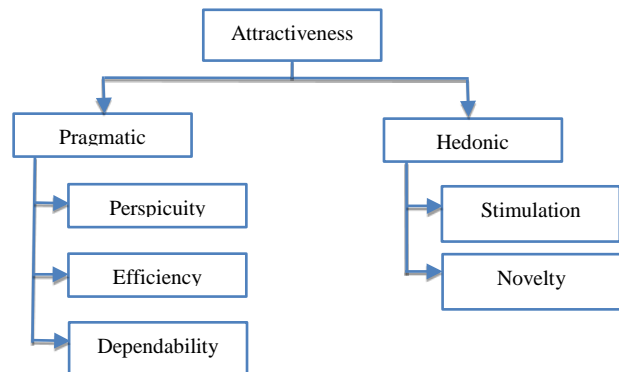

Figure 1. UEQ research design that matches the assumptions of the UEQ scale structure

2.2. Research Respondents

All respondents were prospective teacher students at the Faculty of Education, Sultan Aji Muhammad Idris State Islamic University, Samarinda. Specifically, they were enrolled in the Class of Technology and Learning Media Semester 6 during the Academic Year 2021-2022, which comprised two classes totaling 67 students. The faculty determined the selection of respondents based on their respective classes, and no changes were made to this selection by the researcher.

2.3. Measurement of Instrument

The user experience instrument employed was sourced from the ueq-online.org instrument in Indonesian, which has been utilized by more than 20 countries worldwide. This instrument consists of 26 items and 6 measurement scales, namely attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty [45], [46]. It is explained based on attractiveness scale, which is the overall impression of the product and consists of 6 questions. The vivid reality scale is concerned with how easy it is to become familiar with the product and has 4 question items. Furthermore, the efficiency scale assesses how easily the user can accomplish a task with the product without undue effort and has 4 items.

The dependability scale evaluates the ability of the user to control the interaction and has 4 items. The stimulation scale considers the interesting and motivating nature of the product and has 4 items. Lastly, the novelty scale examines the innovative and creative ability of the product and has 4 items, namely creative/boring, inventive/conventional, ordinary/leading, and conservative/innovative.

2.4. Data Analysis

User experience data using Discord application were analyzed in online statistical analysis at www.ueq-online.org with clear benchmarks and validity [47]. This instrument has been adopted worldwide to find UX using User Experience Key Performance Indicator (UX KPI) [48].

3. Result

The user experience of using mobile learning is very appropriate for fostering the creativity of teaching and learning teachers. Teachers who choose and implement this Discord application are presented as user experience data in learning with new technology.

3.1. Result

Learning steps with Discord are carried out at meetings 1-8 and 10-15 in media and learning technology courses. To facilitate this learning, lecturers make learning steps using technological facilities and equipment, produces creative products in the form of visual media and profile videos, and uses Discord and Instagram for media publication of creative works, as shown in the following figure:
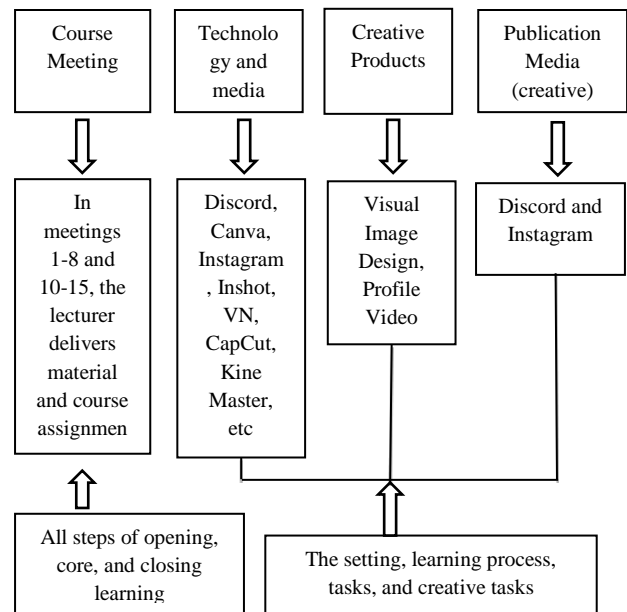

Figure 2. Creative teaching steps with mobile discord learning

Lecturers adopt a creative approach to teaching by leveraging mobile learning with technology-based applications, specifically Discord. At the beginning of each meeting, Discord (as illustrated in Figure 2) is utilized to provide the theme and material, take attendance, distribute and collect assignments, and evaluate learning, as demonstrated in Figures 4 and 5. Even in distance learning situations, Discord application is still used by lecturers, as depicted in Figure 6. Since the application is readily available on Android or mobile devices, students can easily use it for mobile learning. The research findings showed the average test results and standard deviation on the user experience in learning technology and media for prospective teacher students in the Faculty of Education. The calculated results are shown in Table 1.

Table 1. Calculating the user experience of Discord application

Confidence intervals (p=0.05) per scale						
Scale	Mean	Std. Dev.	N	Confidence	Confidence interval	
Attractiveness	1,177	1,164	67	0,279	0,898	1,455
Perspicuity	0,851	1,221	67	0,292	0,558	1,143
Efficiency	1,287	1,091	67	0,261	1,026	1,549
Dependability	1,190	1,101	67	0,264	0,927	1,454
Stimulation	1,474	1,205	67	0,288	1,185	1,762
Novelty	0,989	1,009	67	0,242	0,747	1,230

Meanwhile, the average value in all sections of the 26 question items are as follows:

Table 2. Confidence intervals for items and scales

Item	Mean	Std. Dev.	N	Confidence	Confidence interval	
1	0,866	1,496	67	0,358	0,507	1,224
2	1,463	1,341	67	0,321	1,142	1,784
3	1,000	1,732	67	0,415	0,585	1,415
4	0,731	1,582	67	0,379	0,353	1,110
5	1,418	1,689	67	0,404	1,013	1,822
6	1,507	1,353	67	0,324	1,184	1,831
7	1,612	1,497	67	0,358	1,253	1,970
8	0,970	1,414	67	0,339	0,632	1,309
9	0,970	1,687	67	0,404	0,566	1,374
10	0,299	1,633	67	0,391	-0,093	0,690
11	1,970	1,141	67	0,273	1,697	2,243
12	1,612	1,497	67	0,358	1,253	1,970
13	0,552	1,579	67	0,378	0,174	0,930
14	1,239	1,457	67	0,349	0,890	1,588
15	1,149	1,158	67	0,277	0,872	1,427
16	1,597	1,155	67	0,277	1,320	1,874
17	1,104	1,478	67	0,354	0,750	1,458
18	1,358	1,443	67	0,345	1,013	1,704
19	0,716	1,622	67	0,388	0,328	1,105
20	1,194	1,258	67	0,301	0,893	1,495
21	0,657	1,702	67	0,407	0,249	1,064
22	1,507	1,146	67	0,275	1,233	1,782
23	1,478	1,608	67	0,385	1,093	1,863
24	0,821	1,313	67	0,314	0,506	1,135
25	0,925	1,717	67	0,411	0,514	1,337
26	1,507	1,272	67	0,305	1,203	1,812

Table 2 shows that mean values and confidence intervals are in all parts of the user experience question items. Furthermore, research findings are processed with benchmark scores, data sourced from the experiences of mobile learning users in technology and learning media courses for students.

The findings regarding the user experience of Discord application are "above average, good, and very good". The graph in Figure 3 illustrates the findings from the calculated results according to the values on each scale. The novelty scale obtains an average score of 0.99 with a comparison of the above average benchmark, followed by the perspicuity scale of 0.85, the Attractiveness scale of 1.18, the efficiency of 1.29, and the dependability of 1.19, only the stimulation scale with an average of 1.47 with benchmark comparison good, as seen in the following graphic image:
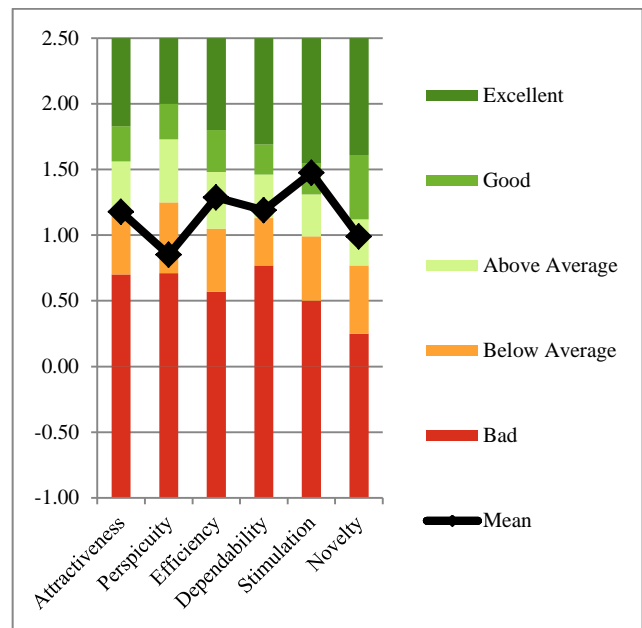

Figure 3. User experience benchmark using Discord application

Using Discord as a mobile learning forum for creative teaching among students shows that the application provides complete technical support. It offers account owner settings, participant or membership settings, messaging features, and online text and voice channel options. The text channel feature provides space for interaction through text, while the voice channel is used for video conferencing. Furthermore, the chat and message-sending features allow user to send photos, sound, and video files in addition to text. All messages are permanent, and lecturers can view comments at any time and review students' learning processes. According to Figure 4, Discord display on mobile devices provides easy and smooth learning interaction between lecturers and students. Figures 5 and 6 show that the display on laptops or portable computers looks attractive and is well-liked by students of all ages. This can enhance creative learning as a technology facility and equipment.

The mobile display shows the learning instructions and the results of students' creative products uploaded on their respective Discords quickly. Meanwhile, lecturers can use various applications on their mobile, such as Canva, Kine Master, and Instagram, to promote students to work creatively and make technology-based products that are engaging and useful. Learning evaluation is easy since the data and results of student uploads are permanently stored in Discord. As a result, lecturers can easily evaluate the portfolio as a form of classroom learning using the application.

Figure 4. Discord application on mobile devices

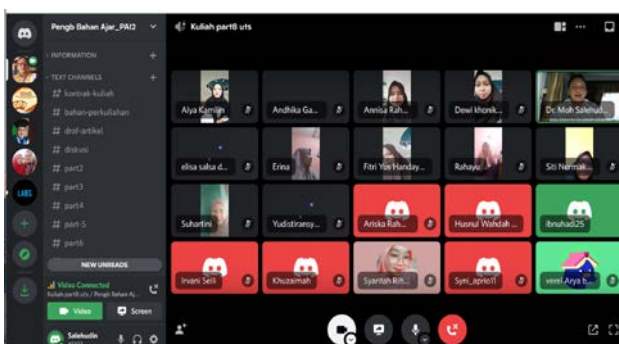

Figure 5. Discord view on laptop

Figure 6. Display when using video conference (presentation and discussion)

The utilization of mobile learning through Discord has enabled all students in the classroom to actively engage in various learning activities. These activities include interaction, submission of learning, task, reports, and sharing creative products such as new or technology-based visual media and profile videos, as illustrated in Figure 4.

3.2. Discussion

The research results indicated that the user experience is positive across all scales. The novelty scale received an average score of 0.99, indicating an above-average level of user experience. The perspicuity scale, attractiveness scale, efficiency scale, and dependability scale at 0.85, 1.18, 1.29, and 1.19 also received good scores. The stimulation scale had an average score of 1.47, considered good, as seen in Figure 3.

These findings are relevant to students' user experience, supporting creativity in the new technology era [49]. Various digital, visual, and video content processing applications are available for students to use on their android devices. For example, using media applications such as "Canva" in combination with social media platforms, Instagram [50], can support learning creativity on smartphones [51]. An in-depth discussion of the research also reviewed digital technology standards, social/cognitive web environments, and knowledge-based design methods [52]. The positive user experience across aspects such as novelty, clarity, attractiveness, efficiency, and dependability reinforces the finding that the use of media and technology can positively impact students' critical thinking and problem-solving skills. This is consistent with previous research where the use of integrated technology is based on acceptance theory [53], the technology acceptance model on social media [54], and an analysis of acceptance models developed for e-learning systems [55].

Considering students' learning conditions, it is imperative to note their adaptation to the present times and current technological sophistication. This is evident through the work and learning products published by students on platforms such as Discord and Instagram, which lecturers use as mobile learning applications. Usability and convenience are continuously introduced to students, facilitating the learning process for prospective teachers in terms of information and learning technology. Therefore, students are equipped to integrate technology into their learning, encompassing pedagogic, content, and technological knowledge [56].

Previous research demonstrated that Discord is an effective and free application converted for learning [24]. Additionally, it is utilized in lessons that positively impact student abilities, suitability, and satisfaction with the learning process [40]. The user experience findings confirm that mobile learning with the application can foster creativity in students and encourage lecturers to adopt more approaches in their teaching. This also empowers students to incorporate new media and technologies in classroom learning.

In conclusion, research on mobile learning with Discord application has successfully created an environment where lecturers and students can enjoy creative learning due to this user-friendly and up-to-date application. This research supports previous findings that creative learning is essential for fostering creativity in the classroom and collaborative efforts between lecturers and students are crucial in realizing and creating creative learning.

4. Conclusion

The utilization of Discord application for mobile learning has proven to be a compelling and enjoyable experience. According to the results on all UEQ-online.org user experience scales, very good scores were demonstrated. Meanwhile, these findings align with several others related to innovative learning in the classroom and developing creative potential for students and lecturers. The mobile learning user experience with this application has been executed proficiently, indicating its ability to adapt successfully to technological facilities and equipment for an engaging and inventive learning experience.

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