Class DojoLMS in the Interactive Learning of PAUD Educators in the Disruption Era 4.0

Sri Watini[1], Qurotul Aini[2], Untung Rahardja[2], Nuke Puji Lestari Santoso[3], Dwi Apriliasari[3]

[1]*Universitas Panca Sakti Bekasi, Indonesia*
[2]*Universiti Teknologi Malaysia, Malaysia*
[3]*Universitas Raharja, Indonesia*

*Correspondence to: *srie.watini@gmail.com*

Abstract: With the change in the learning system from conventional to online in the current pandemic, it is a challenge for teachers, especially early childhood educators, to find interactive learning methods. Therefore, in this paper, we will focus on the Learning Management System (LMS) strategy used by educators to continue to provide quality interactive learning to early childhood education level students. Because until now, the problem faced by Early Child Education (ECE) teachers is that there is no research on dual-function learning applications, both for communication and giving learning assignments. The research will be conducted using the slovin method and surveys of 70 teacher respondents who have experience using learning applications and 30 of them are experts in assessing the visualization of a system. interviews were conducted with a time span of one month from February - March 2021. Aim of the research is to provide learning application solutions that have dual functions and are interactive for early childhood targets. An Interactive learning application for the main target of early childhood, where from the learning media studied ranging from Class Dojo, Whatsapp, Google meet, Youtube, Worksheets, and email, Class dojo which received high votes from 70 respondents by getting 72% results became findings study. This dojo class application can be a recommendation for educators' learning media because it has complete features and can be improved communication between educators and guardians of students through the additional contact feature of the student guardian group of the dojo application.

Keywords: early childhood education, LMS, class dojo, online learning

INTRODUCTION

The spread of the COVID-19 virus is a scourge for all countries in the world, especially Indonesia, which has passed the pandemic period for more than 1 (one) year to date, Virus COVID-19 has had a tremendous impact on (Lutfiani et al. 2021; Adelodun et al., 2020) all aspects of life starting from the social, economic, educational and other fields (Noburu et al., 2020). This extraordinary change is caused by the implementation of Large Scale Social Restrictions (LSSR) (Santoso et al., 2021) which limits face-to-face activities at close distances. The implementation of these restrictions inhibits various activities that place great importance on face-to-face meetings, one of which is the teaching and learning process in the world of education (Novianti & Garzia, 2020). As a result of the spread of COVID-19, educational institutions ranging from early childhood education to higher education have been forced to close (Paudel, 2021) .This is done in an effort to minimize the spread of COVID-19 in educational institutions and the community.

There are changes in regulations in the world of education, there are challenges in changing old learning methods with online learning methods (Rahardja et al., 2022) by utilizing technology that is currently being popularly applied to educational institutions (Dudhat et al., 2021) .This change in learning methods must continue to provide interactive learning for students. Changes in learning methods are challenges that must be faced by educators, where educators must think about the strategies used in learning methods so that students can absorb learning easily (Lamirin, 2021; Singh et al., 2021). This extraordinary challenge is also felt by early childhood educators who have to think harder than other teachers whose students already understand things about online learning media. Educators of students who are in early childhood education are required to be more creative (Spiteri, 2021) in the realization of education for children under the age of 5 years in children's growth and development in terms of creativity, analyzing, and increasing student reflection (Vilchez et al., 2021). Therefore, early childhood education educators are required to design and design online learning that is effective (Alan, 2021), not boring (interactive), and easy to understand (Aini et al., 2021). Although learning is done online (Honesti et al., 2022), educators are given limitations in exploring teaching

materials ranging from learning materials, applications, and applied learning methods. With this limitation, online learning remains focused and easy to understand for students and parents.

In overcoming the problem of learning methods in early childhood education, there is a **solution** that can be applied by educators, namely the application Learning Management System (LMS) with the application of a dojo class that can create a communication relationship between parents and educators in discussing learning activities and children's development in the process. teaching and learning early childhood education (Yauma et al., 2020; Hojeij et al., 2021).
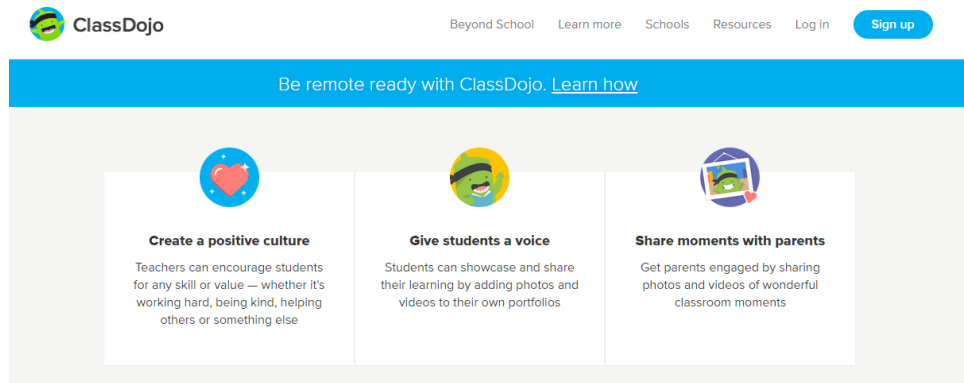

Figure 1. Class Dojo

In this study, we will focus on several studies that we want to highlight from the LMS findings for early childhood teachers with several research questions to be solved.

RQ1: What are the benefits provided by the complete features of an LMS?

RQ2: What are the advantages of using Dojo LMS compared to other LMS?

RQ3: How is the involvement of the Learning Management system in increasing student learning motivation?

Underpinning this research is from the above point of view; Changes in educational methods in the pandemic era have become a challenge for teachers, especially those currently being studied are Early Child Education (ECE) teachers who need an approach with interactive and dual-function learning applications for effective and efficient teaching and learning processes.

In this study researchers will review several previous studies regarding early childhood education learning applications, where in this case the presence of COVID-19 has made several learning applications appear with the advantages of each application being different faced including the low level of participation of children and families which makes online learning a bit hampered (Ford et al., 2021). Challenges faced in Early Children Education (ECE) researchers have previously researched with a number of 1,899 correspondents in 35 cities in Java, Indonesia who got research results that the existence of a learning application must still provide motivation for students in learning (Dwinta & Sapriya, 2021) and bring interest to avoid boredom experienced by students. In addition to these results, this study states that there are several difficulties experienced in the implementation of Early Children Education (ECE) online, including the ability of teachers, the ability of parents, economic capability, and facility constraints, and pedagogical constraints (Yuliejantiningsih 2020). Another difficulty faced by the pandemic in early childhood education is that of the 160 data of teachers involved as research correspondents, the level of stress faced by Early Children Education (ECE) teachers on changes in learning methods. According to available data, 30 percent of teachers reported that their job has been "very stressful" or "extremely stressful" over the first two weeks of implementation of online learning (Smith & Granja, 2021).

Challenges after challenges faced in the application of online learning in the pandemic era will continue and experience changes, in this case, the teaching staff utilizes several online learning applications that help the teaching and learning process continue in the COVID-19 situation (Md Yunus et al., 2021). The first learning application is Google Meet wherein the teaching staff says that they get convenience in learning through Google Meet because they can do learning through visualization directly like a normal class, but through Google Meet, teachers need to think hard to bring creativity in every lesson. to always get the interest of students and avoid boredom of students (Sawitri, 2020). Furthermore, the use of learning applications through the Moodle learning application, in its application Moodle only has one function, which is used as a medium in assigning assignments to students, wherein this case usually the teacher will use additional applications such as Whatsapp to communicate with student guardians to provide task information on Moodle (Polhun et al., 2021). In addition to the application of Moodle, there is a learning application that has the same function as Moodle, namely Google Classroom which is used by various educational circles, including the application to Early Children Education (ECE). Where in its application the collection of

assignments has varied file types, but the obstacles faced in its application are thinking about an innovation that can avoid student boredom, and it is necessary to expand exploration for teachers in attending interactive and varied learning for students (Suryani et al., 2021). The last research is the application of learning using the zoom application media which is popularly used by teachers at various levels of education, wherein its use it feels more interactive with students and provides direct teaching visualization and there are also features that give the impression that participants are in a class, thus providing excitement in the teaching and learning process (Harahap et al., 2021)

Of the 7 (seven) literature reviews that have been described, the teaching and learning process continues to transform, especially in the era of the COVID-19 pandemic, teachers will have challenges in facing the transformation that will hit the education sector. In this case, the role of an application or LMS is very important as a support for the success of students in the teaching and learning process. From the previous research data that has been described, the author will focus on learning applications that have dual functions, both as communication media and learning media in giving assignments that have never been studied before and are the latest in this research for the **novelty** of the Research. Through this research, it will be a solution for teachers in providing interactive learning in the 4.0 era.

METHODS

In research on the Strategy of Early Childhood Educator Activities towards Interactive Online Learning, the Disruption Era 4.0 will apply 1 method in achieving research objectives. The method applied is, the method a qualitative descriptive survey wherein calculating the minimum sample in this study will use the slovin population, namely the formula used in calculating the number of samples in the study with correspondents used in this study, overall focusing on PAUD teachers who have a strong involvement in the success of teaching methods and also student success. In this case, the 70 educators involved have had experience in using existing online learning media and there are 30 of them who have expertise in assessing the visualization of a learning system and the operation of the system.

Below will be described the method of calculating the number of research samples using the Slovin provided that there are 85 people in the populations with a set margin of error of 5% or 0.05 with explanation formula n = Minimum research sample; N = Number of people in a population; e = margin of error.

$$n = \frac{N}{(1 + N.e^2)}$$

$$n = \frac{85}{(1 + 85 \ x \ 0.05^2)}$$

$$n = \frac{85}{(1 + 85 \ x \ 0.025)}$$

$$n = \frac{85}{(1 + 0.2125)}$$

$$n = \frac{85}{(1.2125)}$$

n = 70, 24 is rounded to 70

Based on the results of the slovin population, the interview will use 70 educators as the research sample. Survey method in the form of interviews addressed to respondents (early childhood education educators) is disseminated through social media WhatsApp as a digital distribution medium. This survey method will focus on the causal relationship between the variables studied. Collecting data in answering questions that have been prepared to be answered by 70 respondents of early childhood education educators in the span of 2 months from February to March, in the process of filling out questions, respondents will use a google form questionnaire as a form of supporting the results of the questionnaire obtained digitally (Rahardja et al., 2021)

Figure 2. Survey Method Process

In the survey process, we will go through the stages of data analysis from the collection of information that has been answered by the respondents. Furthermore, through the data analysis stage, the results of the form will sort it to the next stage starting from sorting, grouping, coding, and categorizing it. This stage makes the data more structured so that it is easy to read. By reading the data that has been collected, it will be easier for researchers to determine the final result of the study, namely the effectiveness of the strategies applied by early childhood education educators in the era of disruption 4.0.

RESULT AND DISCUSSION

The current pandemic situation experienced by Indonesia has brought changes to the activities that humans go through, changes that are greatly affected by pandemic conditions and require careful preparation are the world of education (Watini et al., 2020; Allen et al., 2020). In the world of education, there is a need for changes in learning methods that are adapted to the current pandemic conditions and the existence of interactive learning elements (Dayal & Tiko 2020; Mardisentosa et al., 2021). This change in learning methods also makes educators look for solutions and strategies to keep the learning process fun, especially for early childhood education educators whose students are still in the developmental stage. These children who are still in development are what make education more creative (Watini, 2019) in applying online learning methods, they must look for applications or online learning methods that can provide a fun learning as well as recap assignments to be given to parents. With this problem (Sanni & Apriliasari, 2021) ,in this study, the application of the Dojo LMS was presented to be applied by early childhood education educators. This Dojo LMS, will facilitate users to find out the children's activities or attitude development in real-time (Panjaitan et al., 2022). The information conveyed includes school activities and monitoring the development of student attitudes while at school through internet access, with flexible times (Watini et al., 2020).

Furthermore, below, the flow of the use of the Dojo LMS will be explained as well as an explanation of the features that only get from Class Dojo application and can support the learning process from both the parents and educators perspective.

Feature Inviting parents into the class

After successfully inputting students into class, the next thing the educator does is invite parents to class by entering their e-mail or telephone number (Figure 3).
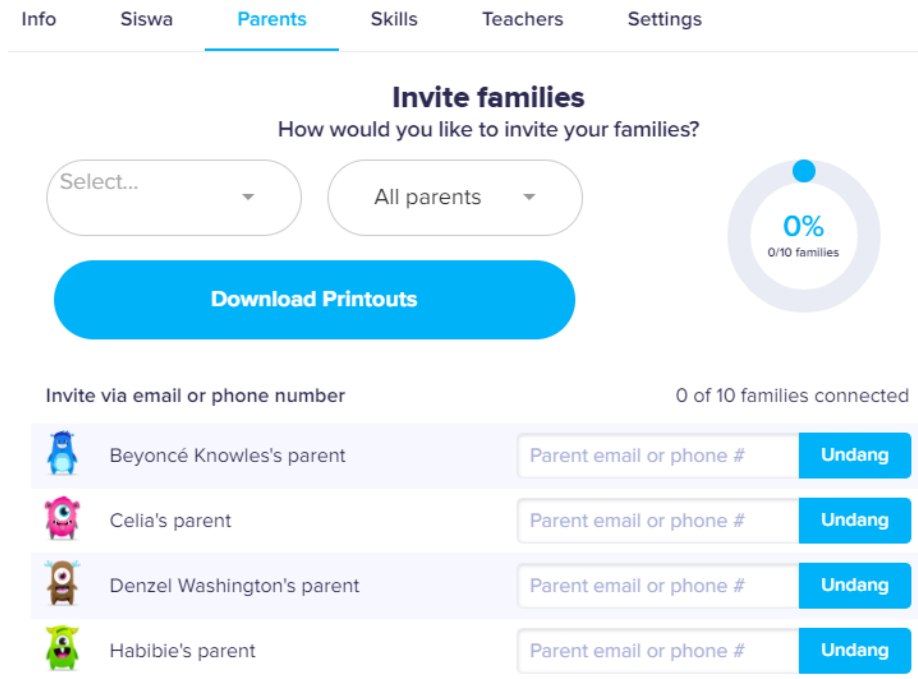
Figure 3. Invitation of parents to class

Feedback Completion

LMS Dojo task presenting features in the form of information icons for educators to provide feedback on completed tasks and later the feedback can be used as reports on child development activities on early childhood education (Figure 4) (Dillon et al., 2019).

Figure 4. Feedback icon

Student Progress Report

Attitude assessment graphs can be viewed per day, week or month. Educators can print behaviour charts to support attitude assessment (Figure 5).
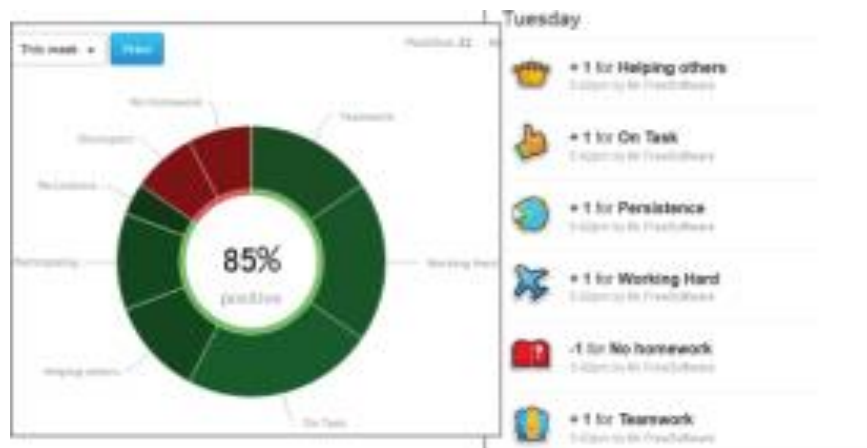
Figure 5. Student progress report

The application of the Dojo class to the early childhood education learning method is a very urgent change for educators and homeroom teachers. However, all of these changes must be passed for the sake of the continuity of the teaching and learning process during the pandemic (Kamil et al., 2020). In order to assess the maturity of the teachers' mastery of the Dojo and Google Meet applications, this study will present an interview survey to 70 respondents. This interview survey is used as an indicator for assessing whether there are obstacles faced by educators and assessing the maturity of mastery of the Dojo and Google Meet applications (Kalloo et al., 2020).
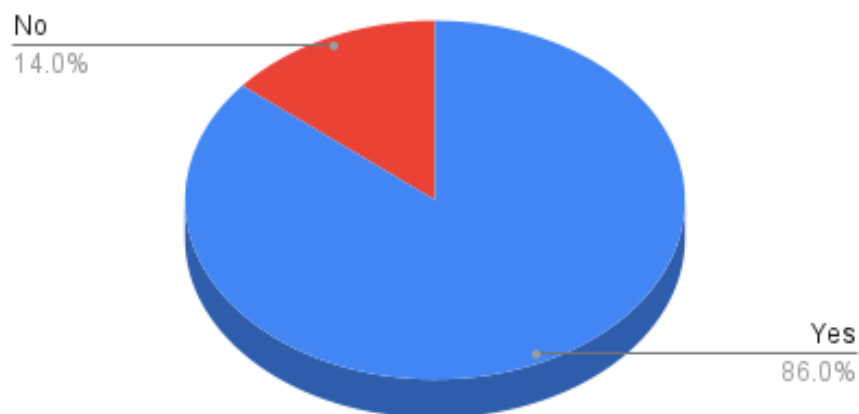

Figure 6. Overview of Mastery of Online Learning Applications

From the figure described above, it can be seen that there are some educators who experience problems or lack mastery of online learning using dojo and google meet classes. The data above shows that as many as 60 educators or as many as 86% have mastered the use of LMS Dojo and google meet while the remaining 10 educators or 14% of educators seem to still have not mastered the application of technology in the online teaching and learning process. From this data, more socialization is still needed for educators to better understand and master the use of the Dojo and Google Meet classes so that they can produce educators who are creative, innovative and become professional educators in the digital era, namely educators who are proficient in technology and can apply it to every activity they do (Widayanti et al., 2021)

Furthermore, the indicators assessed in the interview questions, namely the learning materials carried out in the online learning process.
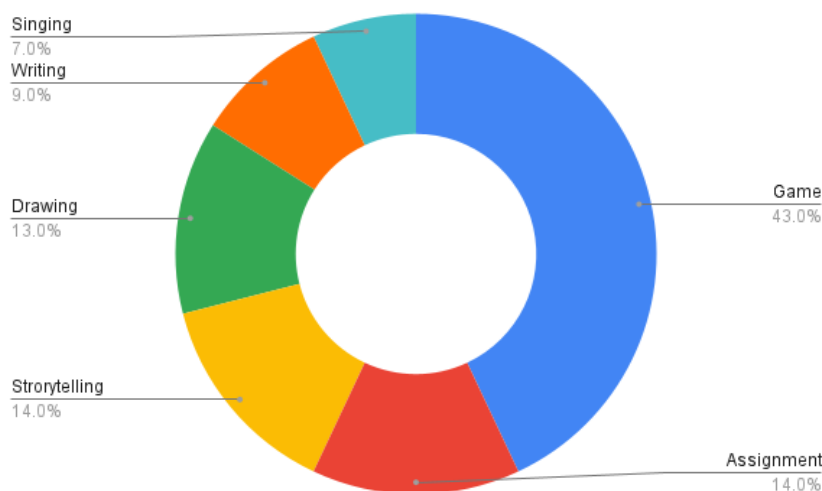
Figure 7. Learning materials carried out by educators

From the figure data above, it can be seen that the popular learning materials used by educators in the learning process are games, which are 30 educators or 43%, in the second position there are storytelling and assignments that get 10 votes from educators or by 14%. The third position was occupied by drawing learning materials which received a vote of 13% or 9 votes from educators. The fourth position was filled by writing training, where in the interview writing learning materials were chosen by 6 educators or 9%. In the fifth or last position, there are singing learning materials that were chosen by 5 students or 7%. It can be concluded that educators use games more for learning materials, where these games can help children's development of the way of thinking, as well as the attitudes needed in completing the given game.

Furthermore, the indicators that will be discussed are the learning used by educators in communicating by the parties involved in the learning process of early childhood education. With the help of this learning media, educators can communicate with parents in discussing activity reports and children's development in learning activities.
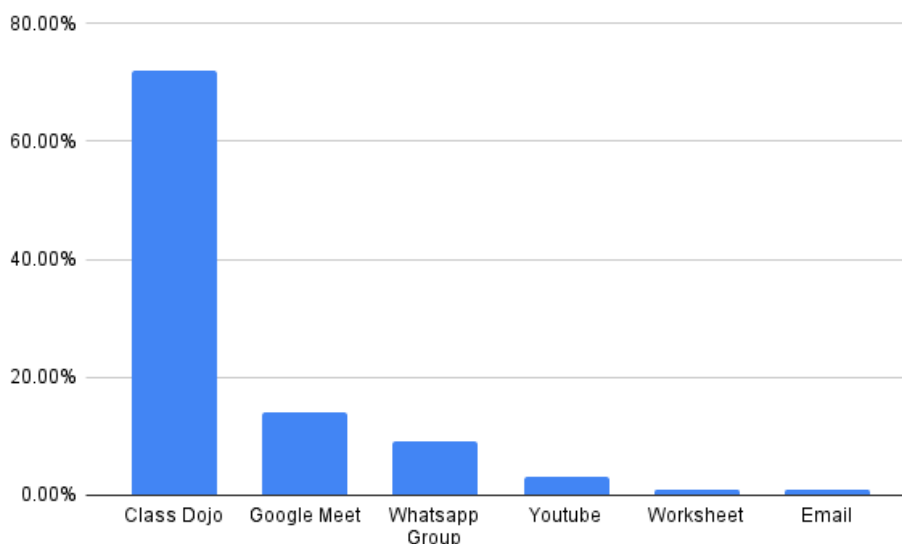

Figure 8. Learning media used

From the data above, it is clear that the suitable learning media for early childhood education is the dojo class, this is evident from the vote of 50 educators or 72% choosing the dojo class. Furthermore, 10 educators or 14% chose to use google meet for learning media. In the third position there is a WhatsApp group that is used as a communication medium as well as a learning medium, the WhatsApp group received a 9% vote, which was chosen by 6 educators. The fourth position is occupied by learning applications through YouTube, where they get a vote of 3% or 2 educators choose to learn through YouTube to be visualized learning so that it is easy to understand. In the fifth and sixth place, there are worksheets and emails as communication and learning media, where each of these media gets a vote of 1%, namely there is 1 voter from the educator.

Judging from the results of the interviews that have been conducted, the following are the conclusions of the answers in the research question posed:

RQ1: What are the benefits provided by the complete features of an LMS?

From the results of interviews conducted, the completeness of the features provided by an LMS application is very efficiently used by PAUD teachers to be able to carry out online learning, with the completeness of an LMS it will download the targets of the PAUD application (early children) and the guardians of students in its operation so it is not confusing.

RQ2: the advantages of using Dojo LMS compared to other LMS?

Table 1. Comparison Dojo Class and Google Classroom

Features	Class Dojo	Google Classroom
Feedback	Class Dojo can give feedback on behaviour of student (Figure 4)	Don't have a feedback feature, because with google classroom students just send their own copy of google drive document (Francom et al., 2021)
Type File Video	Video, Photo, Draw, File	Video, Photo, File
Group Invitation	Class Dojo can create a Parents group for parent communication and report student activities (Pham, n.d.)	Google Classroom can't make group invitations because this classroom just for student submit work & discussions
Report Activity	The dojo class has a feature to display activities that have been carried out to be given to parents (Figure 5).	Google classroom doesn't have this feature (Rao, 2002)

From this comparison, here are some of the advantages of LMS Dojo compared to Google Classroom to be fun application learning. ClassDojo is therefore for concrete classes one of its main selling points (Figure 4) is the ability to teach students about values, rather than just the subject at hand. Google Classroom doesn't feature this aspect. You don't get to assign points to the students for proper in-class behavior. With ClassDojo, you can share files, whereas Google Classroom specializes in file sharing and serves as a cloud environment for teaching materials. ClassDojo also involves parents (Figure 3), they get to join in on the platform and can even serve as parts of different classes. Based on the existing results, the dojo class is the best choice in presenting fun learning.

RQ3: How is the involvement of the Learning Management system in increasing student learning motivation?

The involvement of an LMS system in increasing students' motivation to learn is important, especially in this study to target early childhood so that extra gamification is needed to avoid student boredom. In this case, the dojo application provides fun learning features with rewards (Figure 4) given as well as learning in various forms of files, both video, audio and text.

CONCLUSION

During this pandemic, it becomes a tremendous challenge for all teachers, especially in this case the Early Children Education (ECE) educators because the targets are still young and tend to get bored easily, so they need extra in presenting interactive learning. With the increasing challenges of learning, this study discusses dual-function learning application solutions that make it easier for teachers and users and increase the effectiveness of the teaching and learning process. Based on the research that has been done, the research contributes in the form of the findings of the dojo application which has advantages over existing learning applications. LMS dojo is considered very suitable for educators of children who are still in development, because LMS Dojo provides cute icons and there is a feedback reward in the form of icons that are liked by children that other LMS do not have in the discussion of RQ in research. Through this research, it is hoped that the Learning Management System learning media will develop in Indonesia and be used by many people so that it can advance Indonesian creativity and education. It is hoped that in the future the dojo class application will be more popular and used not only among early childhood education educators but can also be applied at the level of other educational institutions.

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