

## Dinggo Sedaya website: Innovation in digital learning resources for early children's education

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### ABSTRACT

Digital learning resources aim to be a container or reference that can be used as a support to develop existing learning tools. In addition, current technological advances make learning resources one of the containers that can improve digital literacy competencies for its users. Technology mastery skills are key in utilizing digital technology. However, it is unfortunate that digital learning resources are not utilized properly due to limited technology usage skills, especially in learning. In addition, the lack of digital learning resources for early childhood education is one of the limitations in adjusting digital learning resources for Early Childhood Education teachers. This study itself aims to create an efficient, effective, and attractive website product to be used as a digital learning resource for in-depth early childhood education. Data collection methods used include interviews, observations, and filling out questionnaires. This study uses the Research and Development (R&D) method by implementing the ADDIE design. The sample in this study was thirty Early Childhood Education teachers. The results of the study showed that the Dinggo Sedaya website is suitable to be used as a digital learning resource for in-depth early childhood education. Based on the results of validity and feasibility, the Dinggo Sedaya website is valid and suitable for use. This study implies that the Dinggo Sedaya website can be accessed by teachers as a digital learning resource for developing learning tools and improving the digital literacy competencies of Early Childhood Education teachers. Further research is expected to be able to examine the development of digital learning resources more broadly to provide a comprehensive picture and become the basis that digital learning resources need to be developed to support more meaningful learning in early childhood.



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## INTRODUCTION

Information and communication technology is one of the transformation elements in the educational structure in contemporary times. Advances in information technology in the learning process can be simulated more authentically and can be understood using various methods by students (Juniarti & Gustina, 2019). The use of information technology is currently widely available on various platforms as an effort to improve the quality of the learning process. Regarding early childhood education, the current task of educators has a crucial significance in producing a

substantial learning process. Mastery of these competencies is anticipated to increase educators' creative power in realizing learning activities, children's academic achievements, and educators' professional growth which will have an impact on a high level of educational quality (Ismawan et al., 2020).

One way to master these competencies is for teachers to utilize information technology as a learning resource in developing learning tools (Szymkowiak et al., 2021; Wu et al., 2022). Teachers have an important role in supporting learning, including in early childhood education. The development of the modern era currently provides positive support that utilizing digital learning resources can improve the quality of learning (Elumalai et al., 2020). However, the use of technology in early childhood requires expertise to integrate safe and appropriate technology. Teachers act as sorters of learning resources according to children's development in increasing their creativity (Li & Wang, 2022; Wong et al., 2021). Teachers must also be able to integrate technology into learning methods to improve children's growth and development according to the times. This makes the important role of teachers in utilizing digital-based learning resources in learning (Kharismatunisa, 2023; Nurhayati et al., 2024).

However, in its implementation, there are still many educators who have not optimized the use of learning resources with digital technology. This was also expressed by Zyuro & Komalasari (2020) that Childhood Education program teachers still often experience problems in preparing learning tools and using technology. Even though teachers have the main components in designing, implementing, and evaluating each learning activity using methods and media as determinants of the success of the learning process carried out (Putra, 2022). This phenomenon is one factor that causes the lack of digital literacy skills in Childhood Education program teachers (Hardiyanti & Alwi, 2022). Digital learning resources regarding early childhood education are also still limited (Sutama et al., 2021). Educators perceive that the availability of learning resources in special education institutions is still very limited, making digital learning resources inaccessible. Based on the results of observations in using technology, 18 out of 30 Early Childhood Education Teachers Cluster 1 in Kedungkandang Village have not been able to understand and utilize features that can be used as digital learning resources for children. This is because digital learning resources specifically for early childhood are still limited and many find it difficult to access existing platforms, so teachers often do not utilize digital learning resources in developing classroom learning. This situation means that learning resources, especially for early childhood, need to be further developed so that they can make it easier for teachers to access and implement them in learning. This situation is necessary to develop digital-based learning resources that make it easy for users to apply so that they can be accessed universally and flexibly via a website (Gabriel et al., 2022; Huda, 2023).

The novelty of this study focuses on the development of digital-based learning resources for early childhood education that can be utilized by teachers in developing learning. Similar research has been reviewed by Koesmadi et al., (2024) that the use of websites can be a digitalization strategy for the implementation of Childhood Education Programs-HI with five essential child needs services. The study only focuses on the development of digitalization at the Early Childhood Education Programs level, so this study provides innovation through the development of website-based digital learning resources for early childhood education by developing learning materials that can be adjusted to aspects of child development. Through the development of this website, it becomes an innovation in integrating digital learning resources that can be applied to early childhood learning.

This research will examine the management of digital learning resources that can be adjusted to aspects of early childhood development. In addition, this research also offers development with practical methods so that teachers can utilize digital learning resources effectively because they provide ease of use. The convenience and adjustment based on aspects of child development are the novelties of this research from previous research.

## METHOD

The Study This use method of study Research and Development (R&D) aims To make a product new as well as do testing on the product. This matters because, with the use of technique,

researchers can identify and create something more products interesting and useful For the public in general, esp in the scope of educating children early. Application mandatory procedures taken in making something products, research This using the ADDIE procedural model. Stages in study development include: (1) Analysis, (2) Design, (3) Development, (4) Implementation, and (5) Evaluation (Sugiyono, 2022). The ADDIE development model is presented in Figure 1. Stages research and development Dinggo Sedaya website explained as follows:

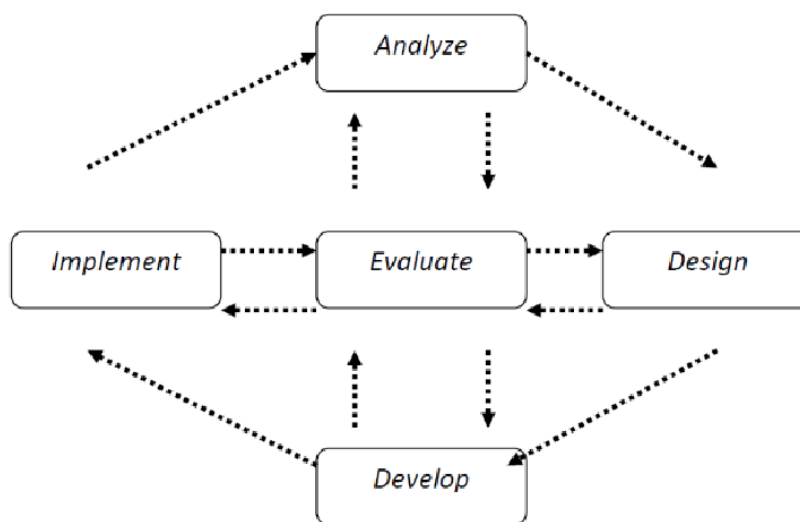


Figure 1. ADDIE Method Stages

### Analysis

Planning media development in research This is done through stage-related analysis with desired media needs developed. Analysis carried out in studies development This consists of analysis need For study problem basics that occur in learning as well as study needs in development learning, as well analysis material covered identification of teacher needs so relevant to the media that will be developed. In research development, analysis of teachers' needs is carried out based on needs development learning through source study accordingly with need digital-based for Early Childhood Education Teachers Cluster 1 Kedungkandang, Malang City. Achievements used in the development Dinggo Sedaya website, namely teachers can operate a website as a reference source for digital learning for children's education age early.

### Design

Stages second in study development This is design (planning). Stages This is done after analyzing problems already found with designing the product that will created, ie designing a use case diagram on the Dinggo Sedaya website. Use case diagrams are depiction-type interactions between the user of a program (system) with the system alone. Use case diagrams utilized as form depiction between actors with a function that will executed.

### Development

Stage third in study development is development. Media development is carried out in four stages that is media development in the form of website, creation instrument assessment, validation products, and media revisions. For four stages of ongoing development are detailed as follows.

#### 1. Media Development in the form of Website

At this stage, this is done by making website nature dynamic and easy operated in accordance with need. The website page contained on page homepage, guide usage, projects, news, as well a page about us. The content of every existing page is customized with analysis needs and analysis material obtained from the analysis and design stage.

2. Making Instrument Evaluation

The development of evaluation instruments in this study was carried out before the data collection process in the form of questionnaires. At the stage of making assessment instruments which includes validation of instruments by experts to assess the attractiveness, effectiveness, and efficiency of the products developed. The evaluation instruments are adjusted to the predetermined grid. The grid for making the instrument is presented in Table 3, Table 4, and Table 5.

3. Validation Product

This stage is carried out after the creation of the instrument, namely conducting media validation and testing the practicality of the media by media experts and material experts. Media validation is carried out based on an instrument in the form of a questionnaire for media experts, material experts, and users.

4. Media Revision

At this stage, this held repair product after validated and tested eligibility based on suggestions and input so that the produced product from the Dinggo Sedaya website is ready implemented and tested by the user.

**Implementation**

Stage 4 in study development This is the implementation of the Dinggo Sedaya website to users. Stage implementation is also used For test media appropriateness when implemented by teachers as users. Try out The Dinggo Sedaya media website will applied twice, namely to groups small and group big. The trial group will involve 8 Early Childhood Education Teachers in Cluster 1 Kedungkandang, Malang City. Furthermore implementation group big will involve all teachers of Early Childhood Education Teachers Cluster 1 Kedungkandang, Malang City. After doing a test run for each group, the teacher is asked To fill in a questionnaire to obtain information about media validity as well as know will problems in the subsequent use of the media revised To find results good product.

**Evaluation**

The final stage in preparation of the ADDIE model is stage evaluation. This process involves enhancement as well as adjustment toward existing media. At a stage, this can also be done in the fourth stage previously named evaluation formative which is purposeful evaluation as repair as soon as possible. At stage this, evaluation to use editing or improvements to existing media designed with the objective get a superior product can applied to reach the objective expected research. Evaluation is done after testing group large amount carried out by users (teachers).

Table 1. Observation Grid

No.	Observed Aspects
1.	Research with Teachers using Digital Learning Resources
2.	Research with Children using Digital Learning Resources Implemented by Teachers
3.	Children's Enthusiasm for Learning by Using Digital Media
4.	Teacher's Ability to Operate Digital Learning Resources
5.	Teachers' Difficulties in Operating Digital Learning Resources

Table 2. Interview Grid

No.	Indicator	Question Topic
1.	Teacher Analysis	Problems Experienced by Teachers Hope for the Future
2.	Need Analysis	Availability of Digital Learning Resources Intensity of use of Digital Learning Resources Problems Regarding Digital Learning Resources Hope for the Development of Digital Learning Resources

Table 3. Material Expert Validation Instrument Grid

No.	Aspect	Indicator	No. Item
1.	Attractiveness	Accuracy of Writing	1,2
		Sentence Accuracy	3,4,5
		Website Appearance	6,7
2.	Effectiveness	Material Suitability	8,9,10,11
		Material Coverage	12,13,14,15,16

(Setyadi &amp; Qohar, 2017)

Table 4. Media Expert Validation Instrument Grid

No.	Aspect	Indicator	No. Item
1.	Attractiveness	Website Design	1,2
		Writing	3,4,5
		Color	6,7
		Picture	8,9,10
		Layout	11,12
		Language	13,14
2.	Effectiveness	Collapse	15,16
		Completeness	17,18,19
		Convenience	20,21,22
		Utility	23,24

(Setyadi &amp; Qohar, 2017)

Table 5. User Validation Instrument Grid (Teacher)

No.	Aspect	Indicator	No. Item
1.	Attractiveness	Website Design	1, 2
		Writing	3, 4, 5
		Color	6, 7
		Picture	8, 9, 10
		Layout	11, 12
2.	Effectiveness	Accuracy of Words	13, 14
		Sentence Accuracy	15, 16
		Material Suitability	17, 18, 19, 20
		Material Coverage	21, 22, 23, 24, 25
3.	Efficiency	Completeness	26, 27, 28, 29
		Convenience	30, 31, 32
		Utility	33, 34

(Setyadi &amp; Qohar, 2017)

Research analysis methods development This consists from analysis qualitative and analysis quantitative. The analysis will used to evaluate results including results observations, interviews, and input in the form of critics or advice from experts or users such as material repair Dinggo Sedaya website media products, data obtained Then will analyzed in a way descriptive. Whereas technique quantitative data analysis form questionnaire validity and practicality. Questionnaire validity is addressed by expert materials and media, meanwhile questionnaire practicality for teachers as users. The assessment instrument is a questionnaire submitted to material experts, media experts, and users using the Likert scale listed in [Table 6](#).

Table 6. Likert Scale

No.	Score	Evaluation
1	1	Very Good
2	2	Good
3	3	Not Good
4	4	Very Not Good

(Sugiyono, 2022)

The achievement results obtained will be converted into percentages using the conversion method using the Formula 1 from (Akbar, 2013).

$$Vah = \frac{Tse}{Tsh} \times 100 \quad (1)$$

Information :

- Vah* = Expert validation
- Tse* = Total score obtained
- Tsh* = Maximum total score
- 100 = Constant

The results obtained from the validation of material and media experts were then adjusted to the validation criteria for the Dinggo Sedaya website. Media validity criteria can be seen in Table 7.

Table 7. Dinggo Sedaya Website Validation Criteria

No.	Level of Achievement	Category	Test Decision
1	0% - 20%	Very Uninteresting	Can not be used
2	21% - 40%	Not Attractive	Can not be used
3	41% - 60%	Less Attractive	May be used with Major Revisions
4	61% - 80%	Quite Interesting	May be used with Minor Revisions
5	81% - 100%	Very Interesting	Used without Revision

(Akbar, 2013)

Website as a digital teaching material for early childhood education is considered successful and can be used as a digital teaching resource if it meets the standards set to be very effective, efficient, and attractive with the criteria of 81% - 100%, the Dinggo Sedaya website is said to be very suitable to be tested.

## RESULTS AND DISCUSSION

### Results

The results of this development research discuss two main things, namely describing the design of the Dinggo Sedaya website as a digital learning resource for early childhood education, and describing the validity of the Dinggo Sedaya website product as a digital learning resource for early childhood education. The design and development of the Dinggo Sedaya website uses the ADDIE model which consists of five stages. The first stage is the analysis stage. This stage aims to analyze needs and material analysis. The analysis stage was carried out by carrying out observations and interviews with Early Childhood Education Teachers Cluster 1 Kedungkandang Village, Malang City. The needs analysis was obtained based on the results of observations carried out at Kindergarten ABA 29 and Kindergarten ABA 20, Malang City. The results showed that teachers often experienced problems in using technology, this was because the features of digital-based learning resources could not be operated by Early Childhood Education teachers. This observation is strengthened by findings from interviews that have been carried out regarding teachers' problems and needs in meeting learning needs in early childhood learning. Based on the results of interviews with the Head of Early Childhood Education Teachers Cluster 1 Kedungkandang District, Malang City, several problems were found, namely teachers complaining about the limitations and ease of accessing digital-based learning resources, the lack of digital learning resources for early childhood education, and the lack

of teacher skills in utilizing digital technology. Material analysis was obtained from the results of interviews with Early Childhood Education Teachers Cluster 1 Kedungkandang Village, Malang City, which resulted in teachers needing learning resources as reference materials that can be applied in education for preschool-age children that are by the dimensions of growth and development. Apart from that, the teacher also explained that Early Childhood Education Programs learning by applying technology-based media makes children more enthusiastic about learning.

The second stage is the design (planning) stage. At this stage, product planning is carried out to be developed by the results of the needs analysis and material analysis. The planning stage is very important so that at the development stage you can produce a product that meets your needs and has a clear plan. This stage is carried out by designing the product that will be made in the form of a use case diagram on the Dinggo Sedaya website. Use case diagrams are the desired operational representation of a system (Maya, 2019). This diagram is used to map system requirements and present interactions so that you can understand the product design according to its functionality. The Dinggo Sedaya website can be accessed by users and administrators. On this website, users can only access the website with read (view) functionality, while administrators have more complex functionality, namely being able to create, read, update, and delete (CRUD). The functionality on this website can be used to access the Dinggo Sedaya website which contains the home page, guidebook page, news page, project page, and about us page. The news and project pages are equipped with a search feature to provide the ease of search needed by users. The project page is divided into categorizations which include media, materials, and methods that can be adapted to the child's growth dimensions which include moral and ethical dimensions, social interaction, knowledge capacity, movement ability, and artistic expression. This website also contains a user manual which can make it easier for users to operate the Dinggo Sedaya website. The About Us page contains the identity of the Dinggo Sedaya website developer as a media publication. As for the use plan case diagram as a design illustration on the website in Figure 2.

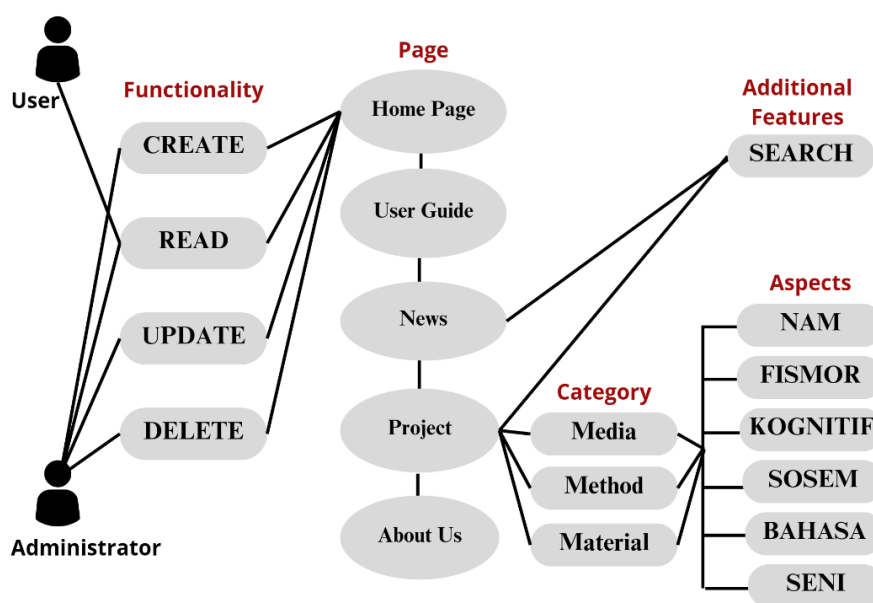


Figure 2. Use Cases Diagram Dinggo Sedaya Website

The third stage is the development stage. At this stage, the Dinggo Sedaya website was developed based on a design adapted to the needs analysis. In this phase, evaluation instruments are also developed, product validation by experts, and media revisions. The media development in the form of the Dinggo Sedaya website was developed according to needs, consisting of five pages, namely the home page, user guide page, project page, news page, and about us page. The development of content on this website is also adapted to material analysis, namely related to material about early childhood on the news and project pages. The results of the development of the Dinggo Sedaya website are presented in Figure 3, Figure 4, Figure 5, Figure 6, and Figure 7.



Figure 3. Home Page



Figure 4. User Guide Page

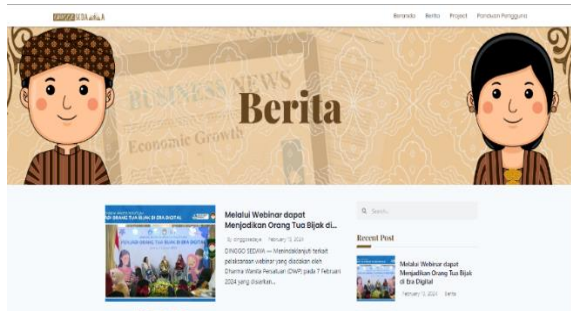


Figure 5. News Page

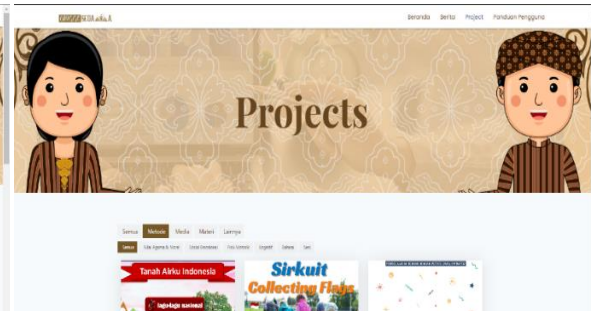


Figure 6. Project Page



Figure 7. About Us Page

This development process also involves preparing a validation tool that is evaluated by material experts, media experts, and users. The validation preparation is adjusted to the instrument guidelines that have been designed. The validation tool for material experts created has two assessment dimensions, namely attractiveness, and effectiveness, the media expert validation instrument developed consists of two aspects, namely attractiveness and efficiency, while the user validation instrument consists of three assessment aspects, namely attractiveness, efficiency, and effectiveness. Next, a validation test of the Dinggo Sedaya website product was carried out by material experts and media experts to determine the suitability of the website product by conducting an assessment based on a questionnaire. The results of the feasibility test for developing the Dinggo Sedaya website as a digital learning resource for early childhood education are presented in [Table 8](#).



**Table 8.** Percentage of Dinggo Sedaya Website Feasibility Test Results

No.	Product Assessment Results	Percentage	Category
1.	Materials Expert	98%	Very Eligible
2.	Media Expert	96%	Very Eligible

The fourth stage in this development research is the implementation stage. At this stage, media is implemented in the form of the Dinggo Sedaya website which has been developed as a digital learning resource for early childhood education. This implementation was carried out by Early Childhood Education Teachers Cluster 1 Kedungkandang Village, Malang City. At this stage, two trials were carried out, including a small group trial and a large group trial. Small group trials were carried out in eight institutions including Cluster 1 of Kedungkandang Subdistrict, each institution involving one teacher as a small group trial. This trial begins with providing a guide to using the website, then the teacher as the user operates the website according to the existing guidelines. After the teacher can operate the website, the teacher is given a questionnaire to assess the level of validity of the website in terms of three aspects, namely effectiveness, efficiency, and attractiveness. The percentage of small-group trial results is presented in Table 9.

**Table 9.** Accumulated Total of Small Group Trials

No.	Assessment Aspects	This	Tsh	P%
1.	Aspects of Attractiveness	345	384	90%
2.	Effectiveness Aspects	465	416	88%
3.	Efficiency Aspect	259	288	90%
<b>Total Score</b>		<b>969</b>	<b>1088</b>	<b>89%</b>

Analysis of the data calculated using the formula above obtained a value of 89%. These results are in line with the eligibility criteria table from Akbar (2013), where if the achievement level reaches 81% - 100%, then you get the Very Eligible category. After carrying out small group trials and getting the Very Eligible category, the next stage is carrying out large group trials. The purpose of the large group trial is to see the attractiveness, effectiveness, and efficiency of the Dinggo Sedaya website. Large group trials were carried out in eight institutions including Early Childhood Education Teachers Cluster 1 Kedungkandang Village, Malang City, with 22 Early Childhood Education Teachers participating. The results of large group trials regarding aspects of effectiveness, efficiency, and attractiveness of the Dinggo Sedaya website media are presented in Table 10.

**Table 10.** Accumulated Total for Large Group Trials

No.	Assessment Aspects	This	Tsh	P%
1.	Aspects of Attractiveness	926	1056	88%
2.	Effectiveness Aspects	983	1144	86%
3.	Efficiency Aspect	688	792	87%
<b>Total Score</b>		<b>969</b>	<b>2597</b>	<b>87%</b>

The results of data analysis calculated using the formula obtained a value of 87%. These results are in line with the eligibility criteria table from Akbar (2013), where if the achievement level reaches 81% - 100%, then you get the Very Eligible category. Based on the results of large group trials by users, several deficiencies were found, so revisions were needed based on suggestions and input. Input for media improvements from users, namely the completeness of each project according to the stage of development so that many variations can be implemented and expanded by educators in their use. The fifth stage is the evaluation stage. At this stage, the overall test results obtained on the Dinggo Sedaya website that has been developed can be declared valid according to material experts, media experts, and users. The recapitulation results of the Dinggo Sedaya website feasibility test according to experts and product trials are presented in Table 11.

**Table 11.** Data from Assessment Results of the Dinggo Sedaya Website as a Digital Learning Resource for Early Childhood Education

No.	Product Assessment Results	Percentage	Category
1.	Materials Expert	98%	Very Eligible
2.	Media Expert	96%	Very Eligible

No.	Product Assessment Results	Percentage	Category
3.	Small Group Test	89%	Very Eligible
4.	Large Group Test	87%	Very Eligible
<b>Total</b>		<b>370%</b>	
<b>Average</b>		<b>92.5%</b>	<b>Very Eligible</b>

Based on table 11 data from the assessment results of the Dinggo Sedaya website as digital teaching materials for early childhood education, approval was obtained from material experts at 98% and from media experts at 96%, these results are classified as "Very Appropriate". During the trial phase with a small group, a percentage of 89% was obtained with the classification "Very Eligible". Meanwhile, at the trial stage with a large group, a percentage of 87% was obtained with the classification "Very Adequate". Based on the overall data results, the Dinggo Sedaya website as a digital teaching material for early childhood education can be considered suitable for use as an effective, efficient, and attractive digital teaching material according to media experts, material experts, and users.

### Discussion

This development research produces a website product that is presented as a digital learning resource for early childhood education. The Dinggo Sedaya website was created to meet the learning needs, especially for Early Childhood Education teachers through alternative digital learning resources that can develop learning and improve the digital literacy skills of Early Childhood Education teachers in utilizing technology. This research has been tested on Early Childhood Education Teachers Cluster 1, Kedungkandang Village, Malang City. Based on the data from the validity test results that have been carried out, the development of the Dinggo Sedaya website as a digital learning resource shows very good recognition from evaluations by experts, and the results of product trials with educators so that the Dinggo Sedaya website that has been developed can be said to be suitable for use as digital teaching materials for early childhood education. This is because the development of the Dinggo Sedaya website uses an appropriate and systematic development model, namely the ADDIE model which consists of several stages, namely the analysis, planning, development, implementation, and evaluation stages which make the work on the Dinggo Sedaya website structured so that it can minimize errors in the development process. In addition, the Dinggo Sedaya website is suitable for use as a digital learning resource for early childhood education due to several other factors such as effectiveness, efficiency, and the attractiveness of its products.

Judging from the aspect of effectiveness, the percentage results by two validators for the Dinggo Sedaya website are 98% and can be declared very feasible. Media experts stated that this website uses communicative sentences so that the information provided on this website can be captured by users. Communicative sentences can provide knowledge that can be understood by the communicator (Fadhila et al., 2022). The Dinggo Sedaya website has been tested in small groups, getting an average effectiveness aspect of 88% or it can be said to be very feasible. Based on the opinions of small-scale users, the effectiveness of this website is based on the website's content with the material needed by teachers in developing learning in early childhood education. This is related to the concept of learning resources that learning resources can be used as sources of information in various forms that provide facilities or ease of learning for students or teachers. The large group test in measuring the effectiveness of the Dinggo Sedaya website that was carried out received an average score of 86% or can be said to be very feasible. Teachers as users of this website stated that this digital learning resource has material coverage that is suitable for early childhood education, so that it can be used as reference material for teachers in developing learning. This is the opinion of Gitelman (2014) that the criteria for good learning resources are based on the suitability of the goals achieved based on instructional elements or child development elements. This is reinforced by Sudjana & Rivai that digital learning resources can make it easier for users to obtain media that is written easily and can be used as a supporting tool (Zyuro & Komalasari, 2020).

Judging from the efficiency aspect, the average attractiveness score by media experts is 96% and can be declared very feasible. Media experts say that this website can help teachers in designing learning through digital learning resources. This is Sudjana & Rivai's opinion that good learning

resources can give teachers skills to use in the learning process (Zyuro & Komalasari, 2020). This website needs to be optimized in terms of its completeness so that it can support users in operating the website by its development objectives. This is in line with the opinion of Wijaya et al., (2022) that in building a quality website the efforts that need to be made are completeness of content on the website, website design, speed, website domain extension, and website ranking in search engines. The Dinggo Sedaya website can also be operated anywhere and at any time by having a domain that is easy to remember so that it can make it easier for users to access it. Increasing the ease of accessing a website can be an effort to provide website visitors with comfort in accessing it (Khwaja et al., 2020). According to eight teachers in small group trials, the Dinggo Sedaya website is easy to access and can be used as a learning resource for early childhood children according to their developmental stage. This is by Sudjana & Rivai's opinion that good digital learning resources provide easy access and use as supporting tools and suit user needs (Zyuro & Komalasari, 2020).

Website as a digital learning resource for early childhood education is packaged according to good website systematics because it is tailored to consistency, completeness, convenience, and usability for target users. The users on this website are Early Childhood Education teachers so the completeness of the material adapts to the learning needs of early childhood. Learning needs for early childhood must be by developmental aspects that are oriented towards the child's development, needs, interests, and abilities (Hernawati, 2016). This opinion is reinforced by the opinion of Wiryotinoyo et al., (2020) that meeting learning needs can be supported through teachers' understanding and skills in utilizing varied media in learning practices. Based on this opinion, the development of the Dinggo Sedaya website has projects that can support learning which include materials, media, and learning methods that can be adapted to aspects of children's development. The results of large group trials obtained a percentage of 87% for the efficiency aspect. The teacher stated that the Dinggo Sedaya website has a presentation that is easy to access for teachers who are still in the learning stage of operating the website as a digital learning resource. Website-based digital learning resources can provide convenience and can be used anywhere and anytime flexibly (Sutriana & Ripai, 2022). This is reinforced by Suyanto's opinion that a good website is a website that provides ease of use (usability) and ease of access (accessibility) (Sa'ad, 2020). The Dinggo Sedaya website also has complete project content and news about Early Childhood Education Programs which can add sources of information for teachers in developing learning. By the results of research that has been carried out on the development of this website, the Dinggo Sedaya website can make it easy for users to access it and is complete as a complete source of information, especially in the scope of early childhood education.

Judging from the attractiveness aspect, the percentage results from material expert validation by two validators on the Dinggo Sedaya website show an average attractiveness value of 98% and can be declared very feasible. According to material experts, the Dinggo Sedaya website has a good website presentation that suits the needs of teachers in early childhood education. This is by the opinion of Setianto & Arifin (2016) that in website design it is necessary to focus on content that suits Early Childhood Education Programs needs. The language on this website is also good so the presentation is more communicative. The linguistic aspect of learning resources consists of sentence accuracy and writing accuracy (Setyadi & Qohar, 2017). Through the accuracy of sentences, complete information can be expressed as an effort to express thoughts completely (Rahayu & Yustiani, 2022). This is a benchmark that language presentation on a website needs to be communicative so that it can be understood by users. The development of digital learning resources for early childhood education should be carried out by the needs of learning resources that support learning for early childhood. The innovation provided to add digital learning resources for early childhood education is categorized according to aspects of early childhood development.

Media experts say that this website has an attractive website appearance to be used as a learning resource for early childhood education. Based on the opinion of Setyadi & Qohar (2017), the appearance of a website consists of the attractiveness of the images, suitability of the size of the images or writing, layout, and language displayed. Websites need to have an appearance with an attractive design and be well organized (Kurniawan et al., 2021). This makes the attractive appearance of the website able to provide user comfort in operating it. The Dinggo Sedaya website has been tested in small groups and it is concluded that the Dinggo Sedaya website is interesting to

use as a digital learning resource for early childhood education. It has been designed according to teachers' needs in developing learning because it is also supported by appropriate image or video visualization in each content. Images and videos can help users understand the context of the discussion. This is the opinion of [Plab.id \(2023\)](#) that by combining image, audio, and video elements in website design you can visualize the concept or product you want to convey. Based on large group trials, it received a positive response from teachers as users. The teacher stated that the Dinggo Sedaya website could help teachers develop learning tools that were packaged attractively and equipped with sentences and images as explanations of the existing content. Through the website, you can provide information services according to your needs in the form of images, video, audio, text, or other animations ([Sutriana & Ripai, 2022](#)). By the results of the research conducted, teachers find it helpful to develop this website as a digital learning resource to support learning. Based on the results of large group trials, it can be concluded that the Dinggo Sedaya website is stated to be very interesting, so this website can be said to be suitable for use as a digital learning resource for teachers in developing learning tools in early childhood education.

Benefit from studies These are results of products that can applied as digital teaching resources for education child preschool that can customized with needs, such as dimensions of growth child who can access For enrich experience Study. Therefore that's the result study This can used as a guide in the application of digital teaching resources in scope education child preschool. Additionally, research This own superior Because minimal studies about the development of special digital teaching resources For education child preschool so that can considered as one of the research that examines learning needs according to aspects of child development. However, this research also has limitations, namely that this website only contains material about early childhood education so that in the face of further research it can create media that can be utilized by higher levels of education. The findings obtained from this research produce research implications, namely that the Dinggo Sedaya website can be used as a variety of digital-based learning resources for early childhood education and can be used in learning tool development activities or to increase digital literacy competencies, especially for Early Childhood Education teachers.

## CONCLUSION

This study shows that the development of the Dinggo Sedaya website is effective in supporting digital learning resources to help develop learning in early childhood education. The results of this study indicate that early childhood learning needs to be supported by media or platforms that can provide ease of use and are appropriate based on aspects of child development. This study confirms that the designed digital learning resources have great potential to support the achievement of interactive learning in early childhood according to current global challenges. This study has limitations in the scope of the research sample in only one cluster. Therefore, further research is needed that can accommodate a wider research scope to obtain a comprehensive picture. This study is expected to update the scientific perspective on early childhood education and be used as a basis for developing more appropriate media to support learning.

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