



Development of DILETA: A Digital-Based Ethical Dilemma Simulation Application for Interactive Character Education Learning for Children

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Abstract

Study This aim For develop as well as test feasibility, practicality, and effectiveness DILETA application as a learning medium interactive digital-based in education character child age early. Research use Research and Development method with the ADDIE model as framework systematic development product. The ADDIE model is applied For ensure that the media was developed based on need real in the field, designed in accordance characteristics development child, validated in a way experts, as well as tested before stated worthy used. Subject study includes five PAUD teachers at the stage analysis needs, six expert validators for media, language and materials at the stage development, 20 PAUD teachers in Focus Group Discussion (FGD) at the stage implementation, as well as 15 PAUD children in the trial limited. Instrument study consists of on form validation experts, FGD guides, and sheets observation based Achievement Level Standards Child Development according to Minister of Education and Culture Regulation Number 137 of 2014. Research results show that DILETA application obtains score validation expert by 88.5% with very suitable category. Teacher responses through FGD showed excellent practicality with average score of 81.6%, especially in the aspect convenience narrative and utilization application as a discussion medium mark character . Effectiveness test through observation show average score of 77.7% with category positive, where the child more consistent understand mark religious and nationalist, while mark integrity Still need strengthening through teacher familiarization and mentoring. In practical, the DILETA application fills educational media gap characters who tend to nature instructional with present dilemma contextual and reflective ethics. With Thus, the conclusion feasibility, practicality, and effectiveness DILETA application is results direct from implementation all over stages of the ADDIE model integrated, so that potential become relevant digital innovation in strengthening education character child age early.

Keywords: media development, ethical dilemma, character education, PAUD

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INTRODUCTION

Character education is an important foundation in the formation of a child's personality from an early age. (Armini, 2024) . Early childhood is often referred to as *the golden age* , where moral, social, and emotional development becomes the foundation for further growth and development. (Erviana et al., 2024; Hasanah, 2024) . In the Indonesian context, character education is not only a necessity but



also a national policy priority, as stated in *the National Action Plan for Character Education* (Ministry of Education and Culture, 2021). The main values emphasized include religiousness, nationalism, independence, mutual cooperation, and integrity (Ministry of Education and Culture, 2019).

However, the reality on the ground shows that serious challenges remain. Data from the Ministry of Women's Empowerment and Child Protection (KemenPPPA) recorded that in 2024 there were more than 15,000 cases of violence against children in Indonesia (KemenPPPA, 2024). Furthermore, the prevalence of bullying *in* elementary and secondary schools indicates that the internalization of character values among children is still suboptimal (Kabarika, 2024). This situation emphasizes the need for innovative strategies in character education, especially in early childhood.

One innovative approach is the use of digital technology in the form of interactive learning media. (Putra & Pratama, 2023; Said, 2023) . Previous research has shown that the use of app-based media can increase children's engagement, strengthen their understanding of moral concepts, and facilitate a more enjoyable learning experience (Romadiyah, Dayurni, & Fajari, 2022). Simulation-based apps allow children to face dilemmas virtually, allowing them to learn to make ethical decisions without real-life risks (Branch, 2015).

It is within this framework that this research developed DILETA (Ethical Dilemmas in Character Learning), a digital simulation application that presents various ethical dilemma scenarios relevant to the world of children. These scenarios invite children to choose between two options, each with ethical consequences. For example, when a child finds a wallet containing money, he must choose between returning it to the teacher despite being late for class, or using the money to help a friend in need. Through these choices, children learn to consider the values of honesty, caring, responsibility, and moral courage.

Urgency development of learning media character based digital simulation is increasingly strong if associated with characteristics child age early in the *golden age* . In the phase this , child most effective learning through experience concrete , visual, and interactive , not through lecture or planting mark verbally only . Method conventional like advice live , story One direction , or rule normative often not yet capable help child understand moral consequences of something action in a way in-depth . On the other hand , digital simulation allows child “ experiences ” the situation ethical in a way No directly , so that the process of taking moral decisions become more meaningful and appropriate with stage development cognitive and social-emotional children . Through simulation , child No only knowing what is right or wrong, but also learning understand reasons and impacts from every choices made.

Besides that , superior digital simulation Because capable present situation safe , repetitive , and contextual dilemmas . Children can try various choice without risk real , at the same time get bait back that pushes reflection with the teacher. This is make digital technology is not just tool help , but rather vehicle learning active and participatory values , which are difficult achieved through method learning character Therefore , the DILETA application is designed to internalize the main character values in a contextual and interactive manner, with the hope of strengthening character education from an early age.

Although various character education media have been developed, most remain general and lack explicit integration of values specific to the Indonesian context, such as mutual cooperation, religiosity, and nationalism. Existing media tend to adopt universal values without contextualizing them with the social and cultural realities of Indonesian children. This creates a gap between the objectives of national character education policies and classroom learning practices. The DILETA application aims to fill this gap by presenting ethical dilemma scenarios relevant to the daily lives of Indonesian children, so that character values are not taught abstractly but internalized through relevant and meaningful experiences.

METHODS

This research uses a Research and Development (R&D) approach with the ADDIE model (Analysis, Design, Development, Implementation, Evaluation). This model was chosen because it allows researchers to develop learning media systematically starting from the needs analysis stage to the product evaluation stage. (Kurniawati et al., 2024; Rahayu, 2025; Rustandi, 2021) .

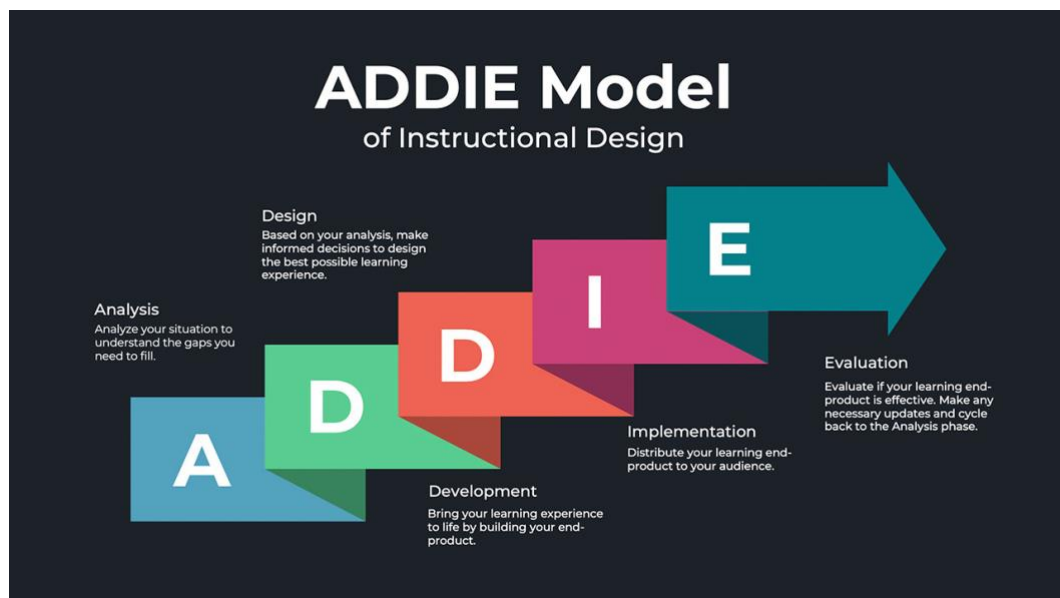


Figure 1. ADDIE Model

Election subject study done use purposive sampling technique , namely election subject in a way on purpose based on criteria certain relevant with objective research . This technique used For ensure that subjects involved own appropriate experience and characteristics with need media development .

At the stage analysis needs , research involving five selected PAUD teachers who are members of HIMPAUDI in a way purposive with criteria : (1) have experience teach at least three years , (2) active teach child aged 4–6 years , and (3) ever or currently integrate education character in learning . These teachers interviewed use semi- structured guide For identify values character priority , situation dilemma relevant ethics with the world of children , as well as preference to form of digital learning media . Analysis results need This become base design scenario DILETA application .

The results of the needs analysis were then used as the basis for designing the *DILETA application scenario*. Second, in the validation stage, the study involved six validators consisting of three media experts, one language expert, and two material experts. The validators assessed the feasibility of the application using a validation form with a Likert scale of 1–5. Third, in the implementation trial stage, the study involved 20 PAUD teachers throughout Walantaka District as Focus Group Discussion (FGD) participants to provide responses to the media that had been developed. In addition, a limited trial was conducted on 15 PAUD children from two schools, namely PAUD A with seven children and PAUD B with eight children.

The research instruments used included several forms. For needs analysis, a semi-structured interview guide was used. For validation, a validation form consisting of three parts was used: a media expert form (9 indicators), a language expert form (7 indicators), and a material expert form (9 indicators). To obtain teacher responses, an FGD guide was used containing structured questions about aspects of appearance, ease of use, relevance of dilemmas, and the potential use of media in learning. Meanwhile, for trials on children, an observation sheet was used containing 10 dilemma conditions according to scenarios in the application. Observation scores used a scale of 0–2 (0 = no, 1 = sometimes, 2 = yes) with indicators derived from the Child Development Achievement Level Standards (STPPA) as stipulated in Permendikbud No. 137 of 2014. For make things easier child in assessing media .

The research procedure began with a needs analysis through interviews with five early childhood education (PAUD) teachers. The next stage was the design and development of the *DILETA application*, which contains ten ethical dilemma scenarios. The developed product was then validated by six experts to obtain input on the appropriateness of the media, language, and materials. After being declared feasible, the application was further tested through focus group discussions (FGDs) with 20 early childhood education (PAUD) teachers to assess their responses to the media. A limited trial was also conducted with 15 early childhood education (PAUD) children to observe how the children responded to the dilemmas presented in the application.

Data analysis techniques were both quantitative and qualitative. Quantitative data were obtained from expert validation and child observations, analyzed using descriptive statistics in the form of percentages and averages. Qualitative data were obtained from needs analysis interviews and teacher focus groups, analyzed using reduction, categorization, and interpretation techniques (Miles & Huberman, 2014).

RESULTS & DISCUSSION

DILETA media validation process was conducted by six validators consisting of three media experts, one language expert, and two material experts. The assessment results showed that the media aspect obtained an average score of 88.9%, categorized as very good. The language aspect obtained a percentage of 88.6%, also included in the very good category. Meanwhile, the material aspect obtained an average score of 87.8%, categorized as very good. Overall, the *DILETA application* obtained a score of 88.5% and was declared very suitable for use as a character learning medium. Several notes provided by the validators were the need to simplify instructional sentences to be more appropriate to the developmental level of early childhood, as well as improving the quality of audio and animation to be more engaging for children. These findings are consistent with literature that emphasizes the importance of simple language, attractive visuals, and media consistency for early childhood education (Widoyoko, 2016; Permendikbud No. 137 of 2014).

Table 1. Expert Test Scores

Validator	Score obtained	Presentation	Category
Media 1	41	91.1%	Very good
Media 2	39	86.7%	Very good
Media 3	40	88.9%	Very good
Language 1	31	88.6%	Very good
Material 1	39	86.7%	Very good
Material 2	40	88.9%	Very good

Results of FGD with PAUD Teachers

After expert validation, the app was piloted through a *Focus Group Discussion* (FGD) involving 20 early childhood education (PAUD) teachers in Walantaka District. Teachers were asked to try the app directly and then provide feedback through a structured discussion. The FGD results showed that the majority of teachers found the app engaging and relevant to children's lives. They appreciated the dilemma scenarios presented, as they aligned with real-life situations children frequently face, such as sharing, being honest, obeying rules, and helping friends. Teachers assessed that the app could be an effective alternative medium for sparking classroom discussions about character values.

Table 2. Calculation of Teacher Responses based on Indicators

No.	Indicator	Total Score	Maximum Score	Percentage	Category
1	Character values according to STPPA	70	80	87.5%	Very good
2	Situation dilemmas relevant to children's lives	65	80	81.3%	Very good
3	Ethical dilemma situations according to what is taught in PAUD	57	80	71.3%	Good
4	Language that is easy for children to understand	58	80	72.5%	Good
5	The narrative is made easy to understand for young children	74	80	92.5%	Very good
6	The consequences of choice are clearly displayed.	59	80	73.8%	Good
7	The game contains expressive animations/sounds.	67	80	83.8%	Very good
8	Games encourage children to think critically	67	80	83.8%	Very good
9	Games can be used for classroom discussions.	74	80	92.5%	Very good
10	The game contains rewards that motivate children)	62	80	77.5%	Good

The FGD results showed that early childhood education teachers responded very positively to the DILETA application. The average score of 81.6% was in the very good category, indicating that this tool is considered suitable for use in early childhood character

education. This aligns with the findings of Romadiah, Dayurni, and Fajari (2022), who confirmed that Android-based learning media effectively improves student learning outcomes due to its ability to integrate visuals, audio, and interactivity.

The indicators with the highest scores were easy-to-understand narratives (92.5%) and the media's usability for classroom discussions (92.5%). This confirms that the DILETA application functions not only as a game medium but also as a discussion starter that encourages children to express the reasons for their choices. Such discussions are important because they can stimulate the development of children's moral abilities in accordance with Piaget and Kohlberg's theory of cognitive moral development (Santrock, 2011). Other indicators that received high scores were the alignment of character values with the STPPA (87.5%) and the relevance of the dilemma situations to children's lives (81.3%). This means that teachers assessed the ethical dilemmas presented as appropriate to the real-life context of early childhood education children, such as sharing, helping friends, being honest, and praying. This supports Permendikbud No. 137 of 2014, which emphasizes the integration of character values into daily learning activities.

However, several indicators scored lower, such as the suitability of the dilemma situation to early childhood education (71.3%), language that is easily understood by children (72.5%), and clarity of the consequences of choices (73.8%). This indicates that teachers still find several aspects that need improvement, particularly simplifying the language to suit the developmental level of early childhood, as well as sharpening the consequences of each choice in the game to make it easier for children to understand. These results align with Hurlock's (2011) opinion that early childhood moral understanding is still concrete, so media presentation must be simple, clear, and based on real experiences.

Overall, teacher responses confirmed that the DILETA app has high practical value as a character education tool. Teachers can use it not only as digital entertainment but also as a classroom discussion material that reinforces religious, nationalistic, mutual cooperation, and integrity values, as outlined in the Early Childhood Education (PAUD) curriculum.

However, there were several important insights. First, teachers emphasized the need for additional rewards in the form of simple symbols (e.g., stars or digital stickers) to increase children's motivation to play repeatedly. Second, several teachers suggested adding dilemma scenarios more relevant to the world of early childhood education (PAUD), such as queuing, sharing toys, or maintaining cleanliness after eating together. These findings align with the opinion of Romadiah, Dayurni, and Fajari (2022) that app-based media is more effective when it combines text, sound, visuals, and interactivity to engage children.

Observation Results of PAUD Students

The limited trial involved 15 children from two early childhood education (PAUD) schools: 7 from Kober At Taqwa and 8 from TK Abdi Pertiwi. Observations showed that the children's response to the application was positive. The children from Kober At Taqwa achieved an average score of 15.8 out of 20, or 79%, in the positive category. Meanwhile, the children from TK Abdi Pertiwi achieved an average score of 15.3 out of 20, or 76.5%, also in the positive category. Combined, the average response was 77.7%, in the positive–very positive category.

Table 3. Observation Results at Kober At Taqwa

Child	Total Score	Presentation	Category
A1	18	90%	Very Positive
A2	17	85%	Very Positive
A3	20	100%	Very Positive
A4	14	70%	Positive

A5	15	75%	Positive
A6	14	70%	Positive
A7	11	55%	Enough
Amount		109	

Table 4. Observation Results at Abdi Pertiwi Kindergarten

Child	Total Score	Presentation	Category
B1	18	90%	Very Positive
B2	19	95%	Very Positive
B3	15	75%	Positive
B4	14	70%	Positive
B5	13	65%	Positive
B6	16	80%	Positive
B7	14	70%	Positive
B8	11	55%	Enough
Amount	120		

Observations show that *DILETA* effectively fosters positive responses in preschool children, particularly in religious and nationalist aspects. This is evident in the majority of children who choose to pray before meals, participate in ceremonies, and dare to sing the national anthem despite the social consequences. However, in terms of integrity (e.g., being honest when getting a higher grade on a report card or refusing to cheat), some children still choose negative options. This finding aligns with Hurlock's (2011) theory of moral development, which states that at an early age, children's moral decisions are often influenced by social consequences (acceptance or rejection by peers) rather than abstract ethical principles. Therefore, the *DILETA application* can be said to be effective as a character education medium, although it requires specific reinforcement of integrity values through habituation and teacher guidance.

Discussion

The research results indicate that the *DILETA* application is considered feasible, practical, and effective as a character education tool for early childhood. This is evident from expert validation, responses from early childhood education teachers through focus group discussions (FGDs), and effectiveness testing on children using observation sheets. The assessment by six validators (3 media experts, 1 language expert, 2 material experts) showed an average score of 88.5%, categorized as very suitable. The media aspect obtained a score of 88.9%, the language aspect 88.6%, and the material aspect 87.8%. These findings indicate that the developed media has met the feasibility standards in terms of technical, linguistic, and content aspects. Notes on improvements provided, such as simplifying instructions and improving audio-visual quality, are in line with the theory that emphasizes that media for early childhood should be simple, consistent, and engaging (Branch, 2015; Widoyoko, 2016).

The responses from 20 early childhood education (PAUD) teachers showed an average rating of 81.6%, categorized as very good. Teachers rated the *DILETA* app as relevant to character education in PAUD, easy to use, and engaging for children. The indicators with the highest scores were easy-to-understand narratives (92.5%) and potential use for classroom discussions (92.5%). This confirms that the app serves not only as a play tool but also as a pedagogical stimulus, enabling teachers to facilitate discussions about children's moral choices.

However, several indicators still received lower scores, such as the appropriateness

of the dilemma to early childhood education (71.3%) and the language being easily understood by children (72.5%). This indicates the need to adapt the scenario to be more contextualized to early childhood education, as well as simplify the instructional language. These findings align with Hurlock (2011) and Santrock (2011), who stated that early childhood is at a concrete thinking stage and therefore requires simple, clear stimuli based on real-life experiences.

Furthermore, an effectiveness test through observations of 15 PAUD children yielded an average score of 77.7%, which is considered positive. Children at Kober At Taqwa achieved 79% (positive category), while those at TK Abdi Pertiwi achieved 76.5% (positive category). Children more easily understood religious values (e.g., praying before meals) and nationalistic values (e.g., participating in ceremonies, singing the national anthem), but still experienced difficulties in integrity aspects, such as refusing to cheat or being honest when report card grades were higher than they should have been. The finding that young children understand religious and nationalistic values more easily than integrity values is significant and reflects the characteristics of moral development in early childhood. Religious values, such as praying before meals, and nationalistic values, such as attending ceremonies or singing the national anthem, are generally presented in the form of repetitive, concrete routines and supported by imitation of adult behavior. Children can observe, imitate, and practice these behaviors without necessarily understanding the abstract concepts behind them. In contrast, integrity values, such as honesty in situations that are detrimental to oneself or refusing to cheat, are often emphasized. demands the ability of internal reflection, self-control, and understanding of long-term consequences, which are developmentally still limited in early childhood.

These findings support the moral development theory that young children tend to make decisions based on social consequences (being accepted or rejected by peers) rather than abstract ethical principles (Hurlock, 2011). Therefore, the DILETA application is effective in stimulating children's understanding of character values, but still requires teacher guidance to consistently instill integrity values.

Based on three main data, it can be concluded that the DILETA application has met the criteria for good learning media: appropriate in content (expert validation), practical to use (teacher responses), and effective in improving children's understanding of character (student observations). These findings also strengthen the national policy on strengthening character education from an early age (Ministry of Education and Culture, 2019; 2021). In general, the findings of this study support the national policy on the importance of strengthening character education from an early age (Ministry of Education and Culture, 2019; Ministry of Education and Culture, 2021). The *DILETA application* can be an alternative digital-based innovation that is relevant to the learning context in Indonesia, especially because it contains religious, nationalist, mutual cooperation, and integrity values that are in accordance with the Standards for Child Development Achievement Levels (Ministry of Education and Culture Regulation No. 137 of 2014).

CONCLUSION

Study This produce DILETA (Ethical Dilemma) application as a learning medium interactive digitally designed For implant values character in children age early through simulation situation a near dilemma with life daily children . Research results show that DILETA application meets three aspect main development of learning media . First , the results validation by media, language and material experts obtained an average of 88.5% with very worthy category , which indicates that application has fulfil criteria technical , linguistic , and substantive material . Second , the response of PAUD teachers through

Focus Group Discussion (FGD) showed an average of 81.6% with very good category, which indicates that application assessed practical, relevant with early childhood education, as well as potential become lighter discussion mark character in class. Third, test the effectiveness through observations on 15 PAUD children resulted in average score of 77.7% with category positive, which indicates that application capable stimulate understanding child to mark character, especially religious and nationalist, although aspect integrity Still need strengthening through teacher habituation and mentoring.

Although Thus, research This own limitations on size relative effectiveness test sample small, so that results obtained Not yet can generalized in a way wide. Therefore that, research furthermore recommended For conduct a trial in larger scale big, involving various background social and regional, as well as use design possible experiments measurement impact term long to development character child.

From the side policies and practices education, DILETA application is recommended For integrated as supporting media learning character in PAUD curriculum, especially in activities habituation and reinforcement values that refer to the Achievement Level Standards Child Development (STPPA) according to Minister of Education and Culture Regulation. Schools and makers policy can utilise application This as part from learning strategies contextual digital-based, at the same time encourage teachers to facilitate discussion reflective so that the values character can internalized in a way more optimal.

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