

## FEASIBILITY OF ANIMATION LEARNING MEDIA USING ADOBE ANIMATE IN CHILD DEVELOPMENTAL PSYCHOLOGY TRAINING SUBJECTS

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### ARTICLE HISTORY

Received : 20-01-2026

Revised : 07-02-2026

Accepted : 25-04-2026

### KEYWORDS

Educational Media;  
Adobe Animate;  
Child Development  
Psychology;

### ABSTRACT

The understanding of child developmental psychology is crucial for the pedagogical competence of elementary school teachers; however, the reality on the ground shows that teachers' access to practical, interactive learning materials that support self-directed learning remains limited. The purpose of this study is to analyze the feasibility of using Adobe Animate animation media in child developmental psychology training courses to enhance pedagogical competence as a self-directed learning tool for elementary school teachers. This study is a Research and Development (R&D) project. The development procedure for this learning media consists of five stages: Analyze, Design, Develop, Implement, and Evaluate. The results of this study, as assessed for media feasibility, indicate that the media expert scored it at 227 (very high/A category), the language expert at 59 (very high/A category), the content expert at 64 (very high/A category), and the instructor scored the visual aspect at 44 (very high/A category) and 53 for content (very high/A category). A limited group of trainees scored 212 for presentation (very high/A category) and 259 for content (very high/A category), while a broader group of trainees scored 427 for presentation (very high/A category) and 517 for content (very high/A category).

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### INTRODUCTION

The Law of the Republic of Indonesia numbered 20 of 2003 concerns the National Education System, and one of its articles states that elementary education is the level of education that serves as the foundation for secondary education. Elementary education plays a crucial role in laying the foundation for students' development cognitively, socially, emotionally, and morally. Children in the elementary level, aged 7-12 years, are in a highly dynamic phase of development and therefore require educational services tailored to their developmental characteristics. Teachers' understanding of child developmental psychology is key to creating learning environments that are safe, meaningful, and student-centered (Jalilah, 2022). Education plays a crucial role in supporting children's cognitive, social,

emotional, and moral development during their formative years. Through appropriate learning experiences, education helps children develop essential knowledge, attitudes, and skills that shape their character and prepare them to face future challenges (Sinha, 2023).

In this rapidly changing era, with the growing demands for teacher professionalism, elementary school teachers no longer serve merely as conveyors of subject matter but also as facilitators who understand the individual differences among their students (Rizal, 2021). The reality on the ground shows that many teachers still face limitations in accessing practical, engaging, and self-paced training in child developmental psychology. The available materials are generally still theoretical and lack interactive learning media relevant to teachers' needs (Tatminingsih, 2017). This shortcoming makes it difficult for teachers to deepen their understanding independently and continuously, particularly in the context of curriculum changes and the need for deep learning. In the modern educational landscape, teachers require accessible, practical, and interactive learning resources to support continuous professional development (Ravikumar., et al, 2024).

Basic education, in order to achieve these goals, must be able to provide a strong foundation during the most critical period of a student's development. Educational programs at this level need to be designed to equip students with various basic skills so that they grow into resilient individuals capable of adapting to advancements in science, technology, and the changing times. Elementary school education is conducted as an effort to help lay the groundwork for the development of all aspects of children's growth and development between the ages of 7 and 12, including cognitive, social, emotional, and moral aspects (Aina dkk., 2023).

Elementary school teachers therefore need tangible support to meet the demands of their profession. To meet the demands for quality educational services, elementary school teachers strongly hope for training that can enhance their pedagogical competencies (Ibrahim & Bilqhis, 2024). The complexity of the demands on elementary school teachers includes: mastering learning materials that foster children's creativity; employing engaging, creative, and innovative teaching methods; creating a conducive learning environment; developing life skills through consistent practice with children; and mastering pedagogical competencies related to child developmental psychology to ensure they can handle children wisely.

The use of educational technology offers a potential solution to these challenges. Animated educational media created using Adobe Animate holds significant potential because it can present material on child developmental psychology in a visual, contextual, and interactive manner. Abstract concepts can be illustrated through visuals, simulations, and real-life examples relevant to teachers' daily experiences, thereby facilitating understanding and practical application in the classroom. Learning media refers to any tools or resources used to convey messages or information during the teaching and learning process, which help capture students' attention and foster their interest in learning (Arsyad, 2013:10). Technology-based learning media allow complex concepts to be delivered through visual, audio, and interactive elements that support more effective learning experiences (Rachayu et al., 2026). The computer and mobile devices are among the tools used by the presenter to help deliver the training material (Maiyanti dkk., 2022).

The potential of computers and mobile devices can be harnessed to enhance the effectiveness of the learning process, as they can display text, images, audio, and video. Flash is a vector-based program that creates small (lightweight) files, making them easy to access on web pages without long loading times (Dhani, 2002:3). The integration of multimedia technology in learning enables the presentation of text, images, audio, and video in an interactive format that can enhance the effectiveness of the learning process (Setiawan et al., 2020). The efforts to make learning media based on Android applications using Adobe animate software to improve learning outcomes (Irawan et al., 2023).

Human development is the scientific study of how humans change, as well as which characteristics remain relatively stable throughout life (Papalia, dkk., 2001:9). Human development is the field that studies how people change throughout their lives. Development is a continuous and orderly process of change, whether it involves an increase in the quantity or size of something that already exists, or the emergence of new elements. Development occurs from a state that is global and not well-differentiated toward a state that is increasingly differentiated,

articulated, and integrated, gradually over time (Fatimah, 2010:43). These aspects of development include: a) Moral and Religious Values; b) Physical; c) Language; d) Social and Emotional; and e) Art (Yusuf, 2014:101-136).

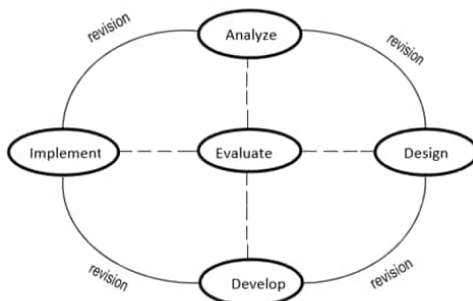
Previous research findings further reinforce the importance of this approach. A prior study conducted by Priyanto dkk (2024) demonstrated that Adobe Flash enhances an enjoyable and effective learning experience for the subject of Minangkabau Culture. This medium facilitates teachers in delivering content in an interactive manner. In contrast, Putra et al. focused on Minangkabau Culture material for elementary school. This research, conducted as R&D, focuses on the development of Adobe Animate specifically for Child Development Psychology material in the context of enhancing the pedagogical competencies of elementary school teachers. The results indicate that learning media developed using Adobe Animate can produce interactive applications that support more effective and engaging learning processes (Wulandari et al., 2021). A similar study by (Apriawan & Nurizka, 2025) showed that the media was highly suitable and effective, with student achievement increasing from 57.70 on the pretest to 90.20 on the posttest. The difference lies in the focus of the study, in which Apriawan and Nurizka developed Adobe Animate media for geometric shapes. This study examines the effectiveness of developing Adobe Animate media for Child Development Psychology material in improving the pedagogical competencies of elementary school teachers. Apriawan and Nurizka's study was conducted with fifth-grade students at SD Negeri 2 Padokan as the sample, whereas this study uses a sample of elementary school teachers across Cluster 02 Punung. Both studies share the use of a research and development methodology.

Based on these conditions, this study developed and tested the feasibility of animated learning media created using Adobe Animate for the Child Development Psychology training course to support the continuous improvement of elementary school teachers' pedagogical competencies and to align with the requirements of the Merdeka Curriculum. The focus of this study is the feasibility of Adobe Animate-based animated learning media in the Child Development Psychology training course as self-directed learning for elementary school teachers. The objective of this study is to analyze the feasibility of animated media using Adobe Animate in the Child Development Psychology training course in enhancing pedagogical competencies as self-directed learning for elementary school teachers.

## METHOD

### Type of Research

Research and development is a type of research focused on high-quality products that are more likely to be applied in educational settings if those products receive validation or recognition from experts in the field. Branch (2009:2) states: "Educational research and development (R&D) is a systematic process to develop and validate educational products using the ADDIE model as a guiding framework for effective, student-centered, and performance-based learning resources". The research phase using the ADDIE development model includes: 1. *Analyze*, 2. *Design*, 3. *Develop*, 4. *Implement* dan 5. *Evaluate* (Branch, 2009:2).



**Figure 1.** The ADDIE Development Model (Branch, 2009:2)

### Research Procedures

The Research and Development (R&D) approach using the ADDIE development model was selected because it includes an evaluation process at each stage, thereby maximizing the effectiveness of the development results. The stages of the ADDIE model in this research and development project are outlined as follows

#### Analyze

The analysis stage was conducted to identify the needs for developing animated learning media using Adobe Animate. Data were collected through questionnaires and interviews with 41 teachers in Cluster 02 of Punung Subdistrict to determine media needs from the perspectives of schools, teachers, and students.

#### Design

The design phase involved creating a product design based on the results of the needs analysis. Activities included developing instructional scripts, storyboards, flowcharts, interface and navigation designs, as well as collecting materials such as images and audio. In the subsequent phase, child developmental psychology content was integrated and developed into animated media using Adobe Animate.

#### Develop

In this phase, the designed media is developed and validated by experts to ensure the appropriateness of content, appearance, and language. The validation team consists of one media expert, one content expert, and one language expert.

#### Implement

The validated materials were tested on elementary school teachers in Cluster 02 of Punung Subdistrict to determine their suitability and effectiveness. The assessment was conducted by experts and users using a Likert scale. The user response test consisted of: 5 people as limited test subjects (small group), 10 people as a large-scale test (large group), and 1 instructor presenting material on child developmental psychology. The sampling technique used cluster random sampling, which was conducted randomly within specific groups and provided equal opportunity to members of the population in the selection of the research sample. The analysis was conducted using quantitative descriptive methods. The conversion reference is provided in Table 1, adapted from Sudijono (2018:175). The scores in the table are comparison scores; the actual results or  $X$  are compared against them.

**Table 1. Conversion of Scores to Grades on a 5-Point Scale**

| Grade | Category  | Score Interval                                       |
|-------|-----------|--|
| A     | Very High | $X \geq \bar{X}_i + 1,8 SB_i$                        |
| B     | High      | $\bar{X}_i + 0,6 SB_i \leq X < \bar{X}_i + 1,8 SB_i$ |
| C     | Moderate  | $\bar{X}_i - 0,6 SB_i \leq X < \bar{X}_i + 0,6 SB_i$ |
| D     | Low       | $\bar{X}_i - 1,8 SB_i \leq X < \bar{X}_i - 0,6 SB_i$ |
| E     | Very Low  | $X < \bar{X}_i - 1,8 SB_i$                           |

$\bar{X}_i$  = mean of ideal scores;  $SB_i$  = standard deviation of ideal scores;  $X$  = actual scores

Data on media feasibility from experts were analyzed using descriptive statistics with SPSS Version 21.0.

#### Evaluate

Evaluations are conducted at every stage of development to address product shortcomings. The final evaluation aims to assess the suitability and effectiveness of the animated media created using Adobe Animate in enhancing the pedagogical competencies of elementary school teachers.

## RESULT AND DISCUSSION

### Results of the Preliminary Study

Preliminary analysis indicates that the self-directed learning materials currently available tend to be monotonous and unengaging, and thus have not been effective in facilitating teachers' practical understanding of how to support the development of elementary school-aged children. This situation has led to low teacher motivation to implement child developmental psychology materials in their teaching practices. Flexible, self-directed learning supported by interactive media is urgently needed so that teachers can learn according to their own schedules and

available time. Based on these conditions, an animated learning resource was developed using Adobe Animate and subsequently tested for its feasibility

**Product Development**

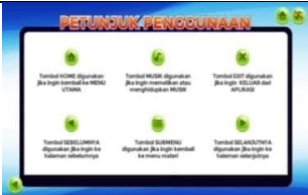



The stages involved in the development of this educational media are: 1. Scriptwriting stage, 2. Review stage, 3. Finalization stage. These stages are described as follows



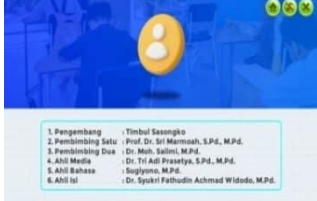
**Product Prototype Development**

**Review and Revision**

The review and revision phase is conducted after the learning program has been developed. The initial product is consulted with the supervising instructor for review or validation by media experts, language experts, and content experts. The initial presentation of the animated media product, created using Adobe Animate software for the child development psychology training course aimed at enhancing the pedagogical competencies of elementary school teachers, is illustrated by the following examples

**Table 2. Initial Product Display of Animated Media Created Using Adobe Animate for the Child Development Psychology Training Course**

| No | Visual  | Narrative  | Description          |
|----|---|--|----------------------|
| 1. |   | Instructions for using the interactive animation feature | Instructions for Use |
| 2. |  | Main Menu Structure and Content Navigation               | Main Menu            |
| 3. |  | Learning Objectives and Competency Goals                 | Introduction         |
| 4. |  | Description of competency standards                      | Competency Standards |

|    |  |  |                   |
|----|--|--|-------------------|
| 5. |   | Menu of development materials                              | Course Materials  |
| 6. |   | Examples of development materials for the six core aspects | Core Content      |
| 7. |  | Profiles of the development team and the expert panel      | Developer Profile |

The next step is expert validation. The validation of each product by media experts, language experts, and content experts before and after revision is outlined as follows

### Media Expert Validation

The first and second stages of media expert validation consist of ratings using a 1-to-5 Likert scale, as shown in the following table

#### Visual appearance

A summary of the first and second stages of media expert validation regarding visual appearance is presented in the following table

**Table 3. Scores from the First and Second Stages of Quantitative Media Expert Validation for Visual Appearance**

| No             | Aspects Evaluated   | Phase 1 Score | Phase 2 Score |
|----------------|---------------------|---------------|---------------|
| 1.             | Font selection      | 5             | 5             |
| 2.             | Font size selection | 5             | 5             |
| 3.             | Color               | 5             | 5             |
| 4.             | Video               | 5             | 5             |
| 5.             | Graphics            | 5             | 5             |
| 6.             | Narration           | 4             | 5             |
| 7.             | Animation           | 4             | 5             |
| 8.             | Background music    | 4             | 5             |
| 9.             | Sound               | 5             | 5             |
| 10.            | Screen design       | 5             | 5             |
| 11.            | Language use        | 5             | 5             |
| 12.            | Setting             | 4             | 4             |
| <b>Average</b> |                     | <b>4,67</b>   | <b>4,92</b>   |

Programming Aspects

A summary of the first- and second-stage media expert validation for the programming aspects is presented in the following table

**Table 4. Assessment Scores for the First- and Second-Stage Quantitative Media Expert Validation of Programming Aspects**

| No             | Aspects Evaluated                 | Phase 1 Score | Phase 2 Score |
|----------------|-----------------------------------|---------------|---------------|
| 1.             | Clarity of instructions           | 5             | 5             |
| 2.             | Ease of use                       | 5             | 5             |
| 3.             | Text readability                  | 5             | 5             |
| 4.             | Text efficiency                   | 5             | 5             |
| 5.             | Narrative clarity                 | 4             | 5             |
| 6.             | Navigation                        | 5             | 5             |
| 7.             | Button consistency                | 4             | 5             |
| 8.             | Efficiency of layer usage         | 5             | 5             |
| 9.             | Anticipation of trainee responses | 5             | 4             |
| 10.            | Trainee engagement                | 5             | 5             |
| 11.            | Speed                             | 5             | 5             |
| 12.            | Quality of generated drive links  | 5             | 5             |
| <b>Average</b> |                                   | <b>4,83</b>   | <b>4,92</b>   |

Learning Aspects

A summary of the first- and second-stage media expert validation of the learning aspects is presented in the following table

**Table 5. Assessment Scores from the First- and Second-Stage Quantitative Media Expert Validation of the Learning Aspects**

| No  | Aspects Evaluated  | Phase 1 Score | Phase 2 Score |
|-----|--|---------------|---------------|
| 1.  | Appropriateness of training course selection                             | 5             | 5             |
| 2.  | Appropriateness of core content  | 5             | 5             |
| 3.  | Clarity of learning objectives   | 5             | 5             |
| 4.  | Clarity of competency standards  | 5             | 5             |
| 5.  | Clarity of learning outcomes   | 5             | 5             |
| 6.  | Consistency of content with learning objectives and competency standards | 5             | 5             |
| 7.  | Clarity of content descriptions  | 5             | 5             |
| 8.  | Clarity of service examples  | 5             | 5             |
| 9.  | Clarity of exercise delivery   | 5             | 5             |
| 10. | Provision of feedback  | 5             | 5             |
| 11. | Quality of learning interactions   | 4             | 5             |
| 12. | Motivation   | 5             | 5             |
| 13. | Relevance to users   | 5             | 5             |
| 14. | Clarity of the sequence of material presentation                         | 5             | 5             |
| 15. | Consistency of tests with learning outcomes and competencies             | 5             | 5             |
| 16. | Feedback on trainees' test results                                       | 4             | 5             |
| 17. | Optimization of the learning process                                     | 5             | 5             |
| 18. | Ease of understanding for trainees                                       | 5             | 5             |
| 19. | Ease of understanding for instructors                                    | 5             | 5             |
| 20. | Improvement of educational program success                               | 5             | 5             |
| 21. | Learning methods   | 5             | 5             |
| 22. | Segmentation   | 4             | 4             |

|                |             |             |
|----------------|-------------|-------------|
| <b>Average</b> | <b>4,86</b> | <b>4,95</b> |
|----------------|-------------|-------------|

Conclusion: The total score for all aspects of the media expert validation is 227, with an average of 4.93, falling into the “very high” category. This program is suitable for use and dissemination.

#### Language Expert Validation

The first and second stages of language expert validation consisted of quantitative data using a 1-to-5 Likert scale, while the overall results comprised comments and suggestions, as shown in the following table

**Table 6. Scores from the Quantitative Validation Results of the First and Second Stages of Language Expert Validation: Language Quality Aspects**

| No             | Aspects Evaluated          | Phase 1 Score | Phase 2 Score |
|----------------|----------------------------|---------------|---------------|
| 1.             | Text Readability           | 5             | 5             |
| 2.             | Sentence Clarity           | 5             | 5             |
| 3.             | Compliance with EYD        | 5             | 5             |
| 4.             | Appropriate Word Choice    | 5             | 5             |
| 5.             | Clarity of Instructions    | 5             | 5             |
| 6.             | Consistency of Terminology | 4             | 5             |
| 7.             | Cohesion and Coherence     | 4             | 4             |
| 8.             | Writing Style              | 5             | 5             |
| 9.             | Contextual Appropriateness | 5             | 5             |
| 10.            | Evaluation Language        | 5             | 5             |
| 11.            | Clarity of Meaning         | 5             | 5             |
| 12.            | Text-Visual Integration    | 4             | 5             |
| <b>Average</b> |                            | <b>4,75</b>   | <b>4,92</b>   |

Conclusion: The total score for all aspects of the linguistic validation is 59, with an average of 4.92, falling into the “very high” category. The media in this program are deemed highly suitable for use and dissemination.

#### Content Expert Validation

Content expert validation in the first and second stages was conducted using a 1-to-5 Likert scale, while overall feedback consisted of comments and suggestions as shown in the following table

##### Learning Aspects

A summary of content expert validation for the learning aspects in the first and second stages is presented in the following table

**Table 7. Results of Quantitative Validation by Subject Matter Experts in the First and Second Stages: Learning Aspects**

| No  | Aspects Evaluated  | Phase 1 Score | Phase 2 Score |
|-----|--|---------------|---------------|
| 1.  | Learning Program Objectives                                    | 5             | 5             |
| 2.  | Learning Guidelines  | 4             | 5             |
| 3.  | Relevance of Competencies and Learning Outcomes to the Content | 5             | 5             |
| 4.  | Content  | 5             | 5             |
| 5.  | Depth of Content   | 4             | 5             |
| 6.  | Methods  | 5             | 5             |
| 7.  | Media  | 5             | 5             |
| 8.  | Resources  | 5             | 5             |
| 9.  | Language   | 5             | 5             |
| 10. | Assessment   | 5             | 5             |
| 11. | Consistency  | 4             | 5             |
| 12. | Adequacy   | 4             | 4             |

|                |             |             |
|----------------|-------------|-------------|
| <b>Average</b> | <b>4,67</b> | <b>4,92</b> |
|----------------|-------------|-------------|

Accuracy of Training Content (Scope of Content)

**Table 8. Evaluation Scores for the Quantitative Validation of Subject Matter Experts in the First and Second Phases: Content Coverage Aspect**

| No             | Aspects Evaluated                                 | Phase 1 Score | Phase 2 Score |
|----------------|---|---------------|---------------|
| 1.             | Accuracy of training materials (scope of content) | 4             | 5             |
| <b>Average</b> |   | <b>4</b>      | <b>5</b>      |

Conclusion: The material validation score was 64, with an average of 4.92, which falls into the very high (A) category. The media-based program developed here is suitable for use.

### Finalization of the Final Product

Finalization involves making final corrections so that the product is ready for implementation as the final product. The finished interactive learning program a computer-based Adobe Animate program for a training course on child developmental psychology is described as follows:

The program page opens automatically when the provided Google Drive link is clicked. This program page features dynamic animations and is accompanied by cheerful background music.



**Figure 2. Course Page for Child Development Psychology Using Adobe Animate**

### Introduction Page

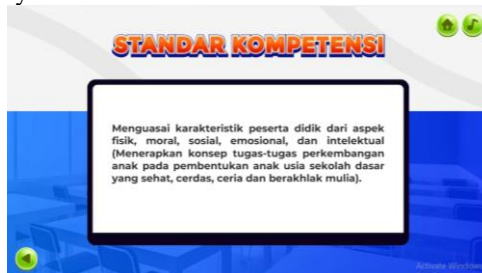
The introduction page covers

The skills that users of this learning program should master.



**Figure 3. Program Introduction Page**

### Competency Standards



**Figure 4. Competency Standards**

Core Competencies

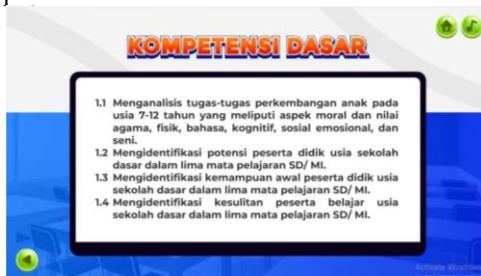


Figure 5. Core Competencies

Achievement Indicators

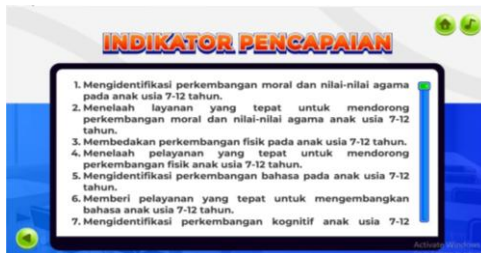


Figure 6. Achievement Indicators, Page 1

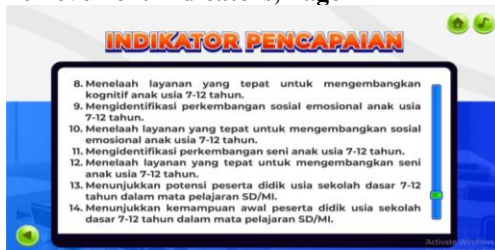


Figure 7. Achievement Indicators, Page 2

Course Content

The curriculum for the child developmental psychology program is organized into six main topics: 1) Morality and Religious Values; 2) Physical Development; 3) Language; 4) Cognitive Development; 5) Social-Emotional Development; 6) Arts.



Figure 8. Learning Materials (6 Topics)

Exercise Pages

The exercises in the child developmental psychology learning program cover 6 topics.



Figure 9. Exercise Instructions

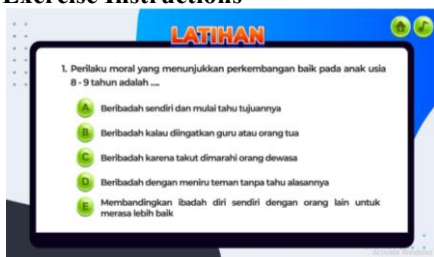


Figure 10. Sample Exercise Questions on Moral Development and Religious Values

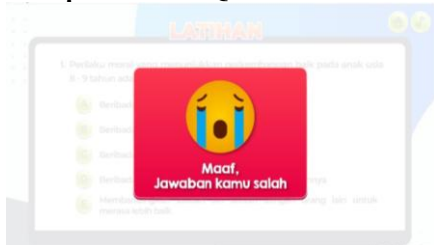


Figure 11. Example of Communicative Corrections to Practice Materials Evaluation Page



Figure 12. Evaluation Page

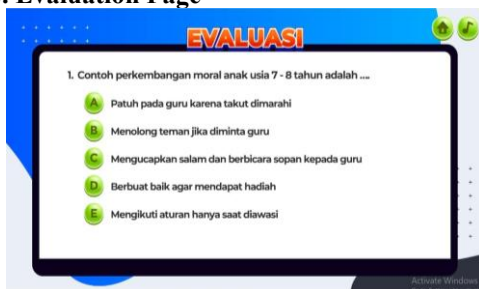


Figure 13. Example Evaluation Questions



Figure 14. Example Evaluation Results



Figure 15. Profile Page

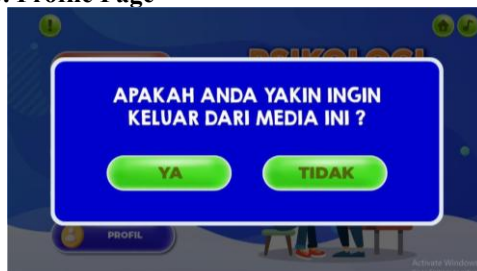


Figure 16. Log out Confirmation Page

### Discussion

The validation of the media was also examined in terms of its impact on teachers' duties and the enhancement of pedagogical competencies. This impact encompasses two aspects: 1) the media's support for teachers' duties in developing lesson plans, conducting instruction, and performing assessments; and 2) the media's contribution to improving teachers' understanding of children's developmental characteristics, which serves as the foundation for enhancing the pedagogical competencies of elementary school teachers. The validation results conclude that animated media created using Adobe Animate meets the criteria as a suitable, practical, and effective learning medium for use in the Child Development Psychology course to enhance the pedagogical competencies of elementary school teachers.

The level of applicability of animated learning media created using Adobe Animate in the Child Development Psychology training course for enhancing the pedagogical competencies of elementary school teachers was also determined through a phased pilot study, including one-to-one testing, small-group pilot testing, and large-scale testing. The results of the one-to-one tests, small-group limited tests, and large-group extensive tests overall indicate that animated learning media using Adobe Animate has a very high level of applicability in the Child Development Psychology training course for enhancing the pedagogical competencies of elementary school teachers. The consistency of scores in the very high (A) category across all trial stages indicates that this medium is not only technically feasible but also practical and contextually relevant to user needs.

Based on the above discussion, it can be concluded that animated learning materials created using Adobe Animate have a very high level of applicability and are suitable for use as learning materials in the Child Development

Psychology training course. These materials are effective in supporting the improvement of elementary school teachers' pedagogical competencies, particularly in understanding the developmental characteristics of children and implementing learning strategies tailored to students' needs. This medium is recommended for wider use and dissemination in training activities, teacher self-directed learning, and as a support medium for parent education.

The findings of this study are consistent with Kaplan (2023) view, which asserts the urgency of developing policy-oriented educational psychology research. This approach is considered essential not only for maintaining the relevance of educational psychology to educational policy and practice, but also for fostering the development of context-sensitive theories with strong ecological validity. The point is the urgency of developing policy-oriented educational psychology research. This approach is considered important not only for maintaining the relevance of educational psychology to educational policy and practice, but also for generating contextual theoretical developments with ecological validity. Kaplan proposes a systematic framework that integrates policy aspects and real-world experiences within the educational context into the classical stages of educational psychology research. This framework is further illustrated through the design of a small-scale research proposal focused on grading policies, as one of the educational practices that has significant and controversial implications. The results of previous research indicate that the level of feasibility assessed by students reached an average of 84%, which falls into the very good category (Rosyid et al., 2024). This study shares a common focus on the development of interactive media based on Adobe Animate to enhance the quality of learning. In addition, educational game applications developed using Adobe Animate have demonstrated validity, practicality, and potential impact on the development of primary school students' character, and can be accessed through various mobile platforms (Ariesta et al., 2023).

Research consistent with these findings was also conducted by Hoadley dan Campos (2022) who identified that the primary challenge in educational psychology research within online learning environments lies in the limited ability to draw generalizable conclusions. The point is that the main challenge in educational psychology research on online learning environments lies in the limitations of drawing generalizable conclusions. Both research activities and independent instructional design processes can generate empirical knowledge. This study highlights the importance of specific configurations that allow the design and evaluation of online learning environments to be conducted simultaneously, thereby enabling systematic evaluation of instructional innovations. Previous studies have shown that the development of integrated learning media based on Adobe Animate has demonstrated strong validity and practicality, making it easier for students to understand the learning material (Wahyuni et al., 2021).

Findings from another study conducted by Rosyid, dkk (2024) indicate that the development of interactive learning media based on Adobe Flash Animate CC is deemed suitable for use in the learning process. The validation results show that the subject matter expert evaluation achieved an 84% score, falling into the "very good" category, while the media expert evaluation achieved an 83% score, falling into the "good" category. The feasibility assessment results by students showed an average score of 84%, which falls into the "very good" category, indicating that the media meets the criteria for feasibility of use. Nowadays digital game applications or interactive children's educational games implemented in mobile devices (to be identified as Apps), are beginning to be widely used to complement children's education. implemented in Android, one programmed in Unity and the second using Adobe Animate (Solorzano Alcivar, et al., 2019). Animate, formerly Flash professional CC 2015, is a standard for interactive vector graphics and Web animation introduced by macromedia and acquired by Adobe. Designers and developers can use it to create presentations, applications, and other content that allows users to interact. Flash can include simple animations, video content, complex presentations, and applications (Song et al., 2019).

Supporting empirical evidence was also reported by Ariesta dan Anggraeni (2023) through the development of the MOPAN (Monopoli Pancasila) multimedia application. This learning tool is designed as an educational game for the Pancasila and Civic Education subject at the elementary school level. The research results indicate that MOPAN possesses good levels of validity and practicality and has the potential to positively impact students' character development. This conclusion is supported by the results of teacher and student response surveys, which showed an average score of 82.5%, thereby confirming that the MOPAN application is suitable for use as a multimedia learning tool.

The findings of a study conducted by Miskiah, dkk (2019) confirm that the integration of Information and Communication Technology (ICT) into teacher training has become an essential requirement. Although most training participants have utilized ICT in learning activities, its use is still limited to presentation media, particularly PowerPoint. Age and technical constraints were identified as the main barriers to optimizing ICT integration. The relevant educational institutions were categorized as having good availability of facilities and infrastructure.

Previously conducted studies have shown that the use of animation-based and interactive multimedia learning materials can improve the quality of the learning process and support the strengthening of teachers' pedagogical competencies. Animation has proven effective in helping teachers understand learning materials in a more concrete, engaging, and easily implementable way in classroom practice, thereby contributing to improved learning effectiveness; however, these studies have not specifically examined the level of applicability of animation media in the Child Development Psychology training program, nor have they involved a phased pilot testing process that includes one-to-one testing, small-group pilot testing, and large-scale group testing. Previous research has also not emphasized a comprehensive mapping of media applicability, particularly in terms of display quality and detailed presentation of material as a basis for formulating recommendations for the dissemination of media to elementary school teachers and parents of students.

The limitations still present in previous studies prompted this research to supplement and expand upon prior findings by presenting empirical evidence regarding the applicability of animation media created using Adobe Animate in the Child Development Psychology training course. The results of this study are expected to provide relevant and practical contributions in supporting the widespread use of animated media to enhance the pedagogical competencies of elementary school teachers, in line with the needs of contextual and policy-oriented educational practices.

## CONCLUSION

The findings of this research and development project can be summarized as follows: the animated learning media created using Adobe Animate for the child developmental psychology training course has been deemed suitable and can be utilized as a self-directed learning tool to enhance the pedagogical competencies of elementary school teachers. This suitability was demonstrated through evaluations by experts, instructors, and both a small and large group of training participants, all of whom rated the media as "very high." This medium also has the potential to support computer or device-based learning and can be further developed for various elementary education training materials.

This product can be distributed to elementary school teachers, parents, and advocates of elementary education as a learning resource on child developmental psychology. This resource can be used as a reference for understanding the stages of child development, as a guide for providing appropriate educational and parenting support, and as a guide for supporting the educational process of elementary school-aged children. For optimal use, this resource should be accessed on a computer or mobile device with adequate display and audio capabilities.

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