

## Effects of Learning Media and Cognitive Style on Children 4-6 Years

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### Abstract

*This study aims to determine the effect of digital media (cartoon videos) and cognitive styles on anti-harassment learning outcomes. This type of research is quantitative, experimental research, using a 2X2 factorial design. It involves two independent variables, namely learning media and cognitive style, and learning outcomes as the dependent variable. The population of this research was 58 aged 4-6 years in kindergarten students at the Early Childhood Education Laboratory, University of Prof. Dr. Hamka, Determination of the sample by random sampling and collected using tests of learning outcomes and cognitive style. The findings show that: (1) Teaching activities that utilize learning media (cartoon videos) affect learning outcomes more than those who use learning media with media cards. (2) there is a difference between students' learning achievement who has independent field cognitive style which shows better performance than students who have field-dependent cognitive style (3) Findings show that students who are taught anti-harassment using digital media obtain better learning achievement than those who are trained using media teach using cards. Utilizing planned digital media that will make it easier for students to manipulate the information they receive with their cognitive structure.*

**Keywords:** Learning Media, Cognitive Style

### INTRODUCTION

Learning media[1] is part of the learning strategy that is the choice of teachers to provide anti-harassment learning and as an effort to improve the results of anti-harassment knowledge. As is known in these decades, teachers are the only source and medium of learning in anti-harassment learning. Early Childhood Education children[2] who are only early listening to teacher lectures, learning looks teacher-centered learning, so knowledge does not reflect student-centered learning[3], less visible active, not creative, and monotonous. Moreover, the age of children who have a concentration power of approximately 3 minutes to sit quietly pay attention to add to the less attractive and unattractive anti-harassment learning conducted by the teacher. Harassment is aggressive behavior or action that involves an imbalance of power that is detrimental to others. This aggressive behavior can be done repeatedly and causes severe problems in the bullied. Harassment can happen to anyone and is done by anyone. Harassment is divided into several types, namely: Verbal, psychological, physical, social, and cyberbullying/harassment through internet-based social media.

Early childhood education becomes an essential education for a child[4]. This is related to the period of growth and brain development of children[5], [6], [7]who have reached 80% at the age of 6 years. At that age, everything that is received by the child will be able to provide stable and durable marks. Mistakes in educating children will have long-term adverse effects that are difficult to fix. Thus it is essential to develop a smart, playful, virtuous, and virtuous nation that should start with early childhood education. However, children need to develop the potential that exists within themselves

with loving care, a sense of security, and respect by avoiding actions (harassment) that will disrupt the child's psychology. Inevitably harassment occurs and is rampantly carried out by children who are still sitting in kindergarten. Based on data released from the (Indonesian Child Protection Commission) mentioning violent behavior in schools, there are still many different types of violence that often occur not only at the secondary and high school level, but cases of abuse also happen at the level of playgroups and kindergartens.

The impact of harassment is not only felt by the victim[8]–[10]. The culprit himself will also explore the consequences. A person often acts bullying but does not have apparent effects, so the person is at high risk of becoming an aggressive child. In addition to being aggressive, they cannot respect others, often impose their will, even in the future they can become dissidents to the state. At the same time, the impact on victims of abuse is recognized to be higher than perceived perpetrators, especially related to the risk of depression. Even when compared between the effects of bullying experienced by adults and children, children will feel a more harmful impact on their psychology.

Therefore, it is necessary to do anti-harassment learning for young children in educational institutions for early childhood education services through the use of digital media technology. This study will look at the media influence of learning media on anti-harassment learning outcomes and cognitive style as a moderator variable that can affect anti-harassment learning outcomes grouped into independent fields.

## METHODS

The research method used was to use an experiment with a 2X2 factorial design, consisting of 2 classes. The experimental class A was treated using digital media learning media and in class B as the control class was given using a media card (flashcard) and moderator variables namely cognitive styles that are distinguished by the independent field cognitive style and the field-dependent cognitive force (X2) and the dependent variable is the result of the study anti-harassment (Y). The population in this study were all group B students at Permata Early Childhood Education Laboratory at the University of Prof. Dr. Hamka, which consists of 2 classes that are given anti-harassment learning.

All students are given anti-harassment learning by teachers who have the qualifications in anti-harassment learning and have competence in the field of early childhood education. Each class follows learning at the same time. Thus the treatment grouping does not have problems and differences in character, to minimize bias in the research treatment — sampling technique by conducting cognitive style tests of students. The research sample was determined by random sampling to learn the treatment sample based on cognitive style class A = 35 children and class B = 35 children.

The learning achievement test uses the requirements analysis test, namely the normality test with the Liliefors test and the homogeneity test with the Barlett test. The research hypothesis test was conducted by factorial analysis of variance (ANOVA) 2X2. The instrument to measure the cognitive style of research subjects using the Group Embedded Figures Test (GEFT) cognitive style test developed by Pltman and Witkin is a valid test. In determining each independent field group, if the scores obtained from 13 to 18 get a score of 1 to 12 included in the field-dependent group (FD). From the test results, it was found that 27 people were independent field (FI) groups. From each group, a sample of 15

children from 27 children for the independent field group (FD) and 15 children from 29 children for the field-dependent group, other than those taken for the remaining sample, still participate in the class but are not used as a sample. For the control class, 14 field-independent children were made, and the field-dependent group (FD) consisted of 14 children, so the number of samples from the digital media learning media group was 30 (A1B1) and (A1B2). For the flashcard learning media group of 28 children (A2B1) and (A2B2). The form of the instrument is a test of student learning outcomes, which is carried out based on the dimensions of anti-harassment learning. The type of test used is multiple choice has five options. Evaluation of each option is answered correctly, then the score is one, and for an incorrect answer, a score of 0. The final assessment of the test is the correct answer.

**Conceptual Definition.** Anti-harassment learning outcomes are knowledge gained by students through the learning process based on learning methods and media to know, understanding, apply and analyzing, synthesizing, and evaluating anti-harassing behavior based on stories presented through the video without ignoring the cognitive style of each learner. Anti-harassment learning is presented in 1 semester with anti-harassment teaching materials, namely: 1) physical harassment, 2) verbal harassment, 3) psychological/emotional abuse, 4) social harassment, 5) cybercrime harassment.

**Operational definition.** Anti-harassment learning outcomes are a description of the abilities and results of knowledge received by students through the anti-harassment learning process with various stages carried out in accordance with the methods and learning models that have been designed, with the aim to foster awareness of anti-harassment behavior that is expected to form anti-violent behavior. Anti-harassment learning outcomes are measured based on objective tests, obtained at the final test how many scores are given after the research treatment is carried out.

2.1 Learning media are aids used in determining to convey messages/information with various types of components in the learning environment of students so that they can stimulate students to learn. In learning activities, students need everything to channel the message of the anti-harassment learning process, the performance of sending this message can stimulate thoughts, feelings, concerns, and interest in learning anti-harassment. The learning media referred to are digital media-based media used in the anti-harassment learning process by utilizing cartoon videos that can be used for the delivery of anti-harassment learning. Furthermore, the other media used in print media in the form of a flashcard card media for anti-harassment education.

2.2 Moderator Variable Instrument. **Conceptual Definition.** Cognitive style is one of the characteristics of individuals that are influenced by learning outcomes is a habit that affects individuals in thinking, remembering, receiving, and processing messages of cognitive style, which consists of two cognitive forms, namely cognitive style independent fields and field dependence. b) **Operational Definition.** Operational-based research is conducted to look for differences in the influence of digital media-based learning media and cognitive styles on improving anti-harassment learning outcomes. Cognitive style is one of the characteristics that can influence the learning outcomes that represent habits and relatively fixed in individuals to think, remember, receive and process cognitive style messages, which are related to using the GEET cognitive style test instrument used by Witkin (Witkin, 1997 ).

## RESULTS AND DISCUSSION

Description of the frequency distribution data of learning outcomes of digital media study group participants obtained research data assessing the value of anti-harassment learning outcomes of students who received cartoon videos consisting of 5 dimensions of the lowest 24 and the highest of 44. From the results of comparison scores of digital media learning, the average value distribution 35.02, mode value 34.51, median 34.89, standard deviation 4.03, and variance 16.15. The frequency distribution of student learning outcomes in the flashcard card media group obtained research data from the lowest anti-harassment student test scores of 27 and the highest 37, the average value of 33.37, mode value 34.84, median 33.65, standard deviation 2, 97, and 8.77 variants. The frequency distribution of student learning outcomes in the independent cognitive style group obtained data on the lowest anti-abuse learning test score is 28, and the highest is 45, the average value is 35.62, the mode value is 37.11, the standard deviation is 3.86, and the variant is 15.01. The frequency distribution of student learning outcomes in the dependent cognitive style group obtained the lowest value of 25 and the highest of 38, the average cost of 31.55, the mode value of 32.00, the medium of 31.64, the standard deviation of 3.19 and the variant of 10.10. The frequency distribution of learning outcomes of students of digital media groups with cognitive fields of independent fields obtained data about the lowest anti-abuse learning outcomes of 31 and the highest 43, the average value of 38.01, mode 38.01, median 38.01, standard deviation 3, 75, variant 14.11. Frequency distribution of students of digital media groups with cognitive style dependent. Data obtained by the results of anti-harassment test scores of digital media learning students with cognitive style depends on 25, the highest is 31.19, the average value is 31.19, mode 29.74, media 30.36 standard deviation is 3.48 and variant is 12.15..

The frequency distribution of learning outcomes of students of the media learning media flashcard card with independent cognitive field style is obtained that the lowest anti-bargaining learning achievement test score is 28 highest 37, average value 34.63, mode value 35.16, media 34.89, standard deviation 2.31. The frequency distribution of student learning outcomes in the media group of learning media flashcards cards with cognitive field-dependent style obtained the lowest test results 27 highest 37, average value 32.04, mode value 31.03, media 32.00, standard deviation 2.52 and variance 6.41. ANOVA 2X2 summary of sources of variance between learning media and cognitive style results are significant. Anti-harassment learning outcomes of students using digital media learning media are higher than students learning with flashcard card media. Obtained the average value of learning outcomes of digital media group students by 35.03, the average value of learning outcomes of students with a flashcard card media of 33.35. Based on the ANOVA ring, it shows that  $F_{count} = 4.98$  is greater than  $F_{table} = 4.01$ , so it was decided that  $H_0$  was rejected and  $H_a$  was accepted at a significant level of 0.05. Anti-harassment learning outcomes of students who have independent field cognitive styles are higher than students who have field-dependent cognitive styles. From the analysis of the data obtained, an average learning outcome of anti-harassment of separate field cognitive style groups of 36.61. ANOVA results in the table show that  $F_{count} = 29.41$  is greater than  $F_{table} = 4.01$ . So it was decided that  $H_0$  was rejected, and  $H_a$  was accepted at a significance level of 0.05. Thus it was concluded that the research hypothesis stating the learning

outcomes of independent field cognitive style group students with digital media learning media was better than students who were taught with flashcard card learning media directly tested. Interaction between Learning Media and Cognitive Style of Students Against Learning Outcomes. Based on testing, the hypothesis shows that the calculated F value = 6.90 is higher than F table = 4.02, then it was decided that  $H_a$  was rejected.  $H_o$  was accepted at a significance level of 0.05.

It was concluded that the research hypotheses which state that there is an interaction between learning media [11], [12] and cognitive style in influencing the learning outcomes of anti-harassment of students are tested. Anti-harassment learning outcomes of students who have an independent field of cognitive style using digital media learning media are higher than students using media flashcard card learning. The average value of students of digital media learning media groups and independent field cognitive styles (38.01) is higher than the average values of learning outcomes of flashcard card media students and independent field cognitive styles (34.63). From the results of the calculation of the test, Scheffer shows that  $F_{\text{arithmetic}} = 2.82 >$  from  $F_{\text{table}} = 2.76$  so that it gives a decision to accept  $H_a$ . Thus the research hypothesis which states that anti-harassment learning outcomes with digital media learning media and independent field cognitive style are better than anti-harassment learning outcomes with flashcards card learning media and independent field cognitive style tested for correctness.

Anti-harassment learning outcomes that have a field-dependent cognitive style that uses digital media learning media are higher than students who use flashcard card learning media. The average value of anti-harassment learning in flashcard card media learning groups and field-dependent cognitive styles (32.01) is better than the average learning outcomes of digital media group students and field-dependent cognitive styles (31.21). Scheffe test calculation results indicate that  $F_{\text{arithmetic}} = 0.66 <$  from  $F_{\text{table}} = 2.76$  so that it gives a decision to accept  $H_o$ . Thus the research hypothesis states that students' anti-harassment learning outcomes with flashcards card learning media and field-dependent cognitive styles are better than students' anti-harassment learning outcomes with digital media learning media and field-dependent cognitive styles are untested.

Anti-harassment learning outcomes that use digital media learning media and independent cognitive styles are higher than students who use digital media learning media and field-dependent cognitive styles. The average value of students' anti-harassment learning outcomes in the digital media learning media group and independent field cognitive styles (37.00) is better than the average learning outcomes of digital media group students and the field-dependent cognitive learning styles (31.19). Scheffe test calculation results show that the calculated  $F_{\text{table}} = 5.76$  from  $F_{\text{table}} = 2.76$  so that it gives the decision to accept  $H_o$ . Thus stating that the learning outcomes of anti-harassment learners with digital media learning media and independent field cognitive style are better than the learning outcomes of anti-harassment learners with digital media learning media and the field-dependent cognitive style is verified. Anti-harassment learning outcomes of students who have independent field cognitive styles using flashcard card learning media are no higher than students who use flashcard card learning media that have field-dependent cognitive styles. The average value of students in the flashcard card learning media group and the independent field cognitive style (34.64) is higher than the average value of the learning outcomes of the students of the flashcard card media group and the field-dependent cognitive style (32.01). Scheffe calculation results show that  $F_{\text{arithmetic}} = 2.89 >$  from  $F_{\text{table}} = 2.75$  so that it gives a decision to reject  $H_o$ . Thus the research

hypothesis which states that the results of anti-harassment learning with media cards flashcard and independent field cognitive style is not higher and no different because it is not empirically tested compared with students' anti-harassment learning outcomes with media learning media flashcard cards and field-dependent cognitive style examined the truth.

### *1.1 The implications of applying anti-harassment learning*

The effect of the anti-harassment learning process for kindergarten students of the gem age 4-6 year early childhood education laboratory, it is possible to develop an anti-harassment learning strategy by utilizing digital learning media that is used as a learning resource. Learning media using digital media is a video designed to contain dimensions and indicators of anti-harassment learning to convey messages to students. Digital media as a learning resource available in Permata early childhood education laboratories and ready to be used as a learning medium functions as a learning resource and has a message that can be one of the anti-harassment learning strategies, in this case, a lot emphasizing information processing or inquiry that can be made wrong a part of the strategy and the steps. By using digital media in the form of anti-harassment videos, reducing teacher-oriented learning because students watch, listen, find out, and think about positive and negative behaviors seen in digital video media.

## CONCLUSION

The results showed that the learning outcomes of students who use digital media in anti-harassment learning in children aged 4-6 years in kindergarten laboratories in Permata early childhood education were higher than using card media. These findings, the kindergarten teacher, can continue to be creative in developing learning media better by the learning objectives.

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