



**DEVELOPMENT OF INTERACTIVE MULTIMEDIA
BASED ON CONTEXTUAL TEACHING AND
LEARNING ON THEME 6 MY GOALS SUB-THEME
1 ME & MY DREAMS CLASS IV SD NEGERI
106789 TANJUNG GUSTA**

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Abstract

This research and development aim to 1) develop interactive multimedia based on Contextual Teaching and Learning on the theme 6 my ideals, subtheme 1 I & my dreams in the fourth grade of SD Negeri 106789 Tanjung Gusta; (2) the position of interactive multimedia based on Contextual Teaching and Learning on the theme 6 my goals, sub-theme 1 I & my dreams in the fourth grade of SD Negeri 106789 Tanjung Gusta; (3) Knowing the effectiveness of interactive multimedia based on Contextual Teaching and Learning on theme 6 my ideals sub-theme 1 I & my dreams in improving student learning outcomes in grade IV SD Negeri 106789 Tanjung Gusta. The development model in this research is 4D which consists of 4 stages, namely: define, design, develop, and distribute. The results showed that: (1) the expert's assessment of multimedia content/materials was in very decent criteria with an average score (4.58); (2) the expert's assessment of multimedia construction is in very decent criteria with an average score (4,62); (3) the assessment of instructional design experts is in the very feasible criteria with an average score (4,43). Moreover, it is effectively used to improve student learning outcomes, including the percentage of classical completeness in the first trial reaching 80% with an average N-Gain acquisition of 0.5 and the classical mastery percentage in the second trial reaching 100%,

with the average N-Gain acquisition being 0.8 and received a positive response from the teacher reaching an average of 3.4 with very decent criteria.

Keywords: *Development, Interactive Media and Problem Based Learning*

A. Introduction

Curriculum 2013 (K-13) is the curriculum that applies in Indonesia, and curriculum 2013 has four aspects of assessment, namely aspects of knowledge, aspects of skills, aspects of attitudes, and behavior. Thematic learning is integrated learning that uses themes as a unifying and binding material for several subjects in an integrated manner in face-to-face meetings. Thematic learning emphasizes the involvement of students in the learning process so that students can gain direct experience and are trained to find the knowledge they learn for themselves.

According to Ayuwanti (2016), learning is all activities that interact with each other, so that it causes changes in learning behavior, for example, from not knowing to know, from not being able to carry out activities to be able to carry out activities, and so on. The quality of the learning activities carried out is very dependent on the planning, implementation of the learning process, and the evaluation of learning by the teacher. The teacher's task is not merely to teach (teacher-centered) but rather to teach students (children-centered). Learning is also a process of seeing, observing, and understanding something that is around students.

Learning media is very important in achieving learning objectives because it is more exciting and fun. According to Adam and Syastra (2015), learning media are everything, both physical and technical, in the learning process that can help teachers make it easier to convey subject

matter to students to facilitate the achievement of learning objectives formulated. Furthermore, according to Ikman et al. (2015), learning media are everything that can be used as a tool in the teaching and learning process to channel messages from the sender to the recipient so that learners can use all their senses to analyze, understand, understand and implement the knowledge and skills they get.

According to Asyhar (2011: 175), the quality of learning media includes: (1) the quality of the content and objectives; (2) instructional quality; (3) technical quality. The quality of content and objectives include accuracy, importance, completeness, balance, arouse students' interest and attention in learning, and suitability to student situations. Instructional quality includes providing independent opportunities to students, motivating students to learn, ease of interacting with the material in the learning media. Technical qualities include color composition, text legibility, ease of use, media display quality.

Through technological advances, teachers can use various learning media according to their needs and learning objectives. Adobe Flash Pro CS6 is computer software that can be used as a learning medium to create vector-based animations with negligible results. Initially, this software was used to create animations or internet-based applications (online), but in its development, it is used to create animations or applications that are not internet-based (offline). With Action Script 3.0 it brings, Adobe Flash Pro CS6 can be used to develop games or teaching materials such as quizzes or simulations (Shofiani, 2012).

Online learning can minimize access limitations and limited facilities, eliminate understanding limitations because the material is displayed digitally, and provide broad access to educational resources (Mustofa, et al., 2019). Online learning is a solution for the limited time of

teachers and students in learning activities at school during a pandemic *Coronavirus Disease* (Covid-19), which impacts all Indonesian people, one of which is in the field of education (Dewi, 2020).

Elementary school students (SD) are between the ages of 6-12 years. According to Piaget's theory of cognitive development, children at that age have a concrete operational way of thinking, so that in learning, they must use concrete objects. In other words, in carrying out learning in elementary school, students must be invited to real situations close to their lives and are often found in life, both in the school environment and the community.

Contextual Teaching and Learning considered as an approach that allows students to participate in the learning process actively. The contextual Teaching and Learning approach is a learning concept that helps teachers relate the material being taught to real-world situations that encourage students to connect their knowledge and its application in everyday life. According to Kadir (2013), the Contextual Teaching and Learning approach have seven main components, namely: constructivism (constructivism), asking (questioning), finding (inquiry), learning community (learning community), modeling (modeling), reflection (reflection) and assessment. Actually (authentic assessment).

From the observations made by the researchers that the learning process is less varied in SD Negeri 106789 Tanjung Gusta because it is theoretical and focuses more on spending the 6th theme of my ideals, the sub-theme of learning from textbooks. Students only listen, write and memorize what is explained and instructed by the teacher to become passive in the learning process.

Sharma's (2013) research results; Napitupulu, Julaga, and Mursid (2014) stated that interactive multimedia development makes it easier for

teachers to improve student learning outcomes. Rita and Situmorang's (2014) research shows that the interactive internet multimedia developed is feasible to use and improves student learning outcomes.

B. Method

1. Type of Research

This type of research is research and development (Research and Development). In this study, what will be developed is learning media using Adobe Flash Pro CS6. The final product will be evaluated based on the specified learning multimedia assessment instrument. Thus, the product of this research is proper and effective learning media.

2. Place and Time of Research

The place of the research was carried out at SD Negeri 106789 Tanjung Gusta, which is located at Jalan Penitentiary No. 30 Sunggal District, Deli Serdang Regency. The research was carried out in the even semester of the 2020/2021 school year, namely March 17, 2021.

3. Research Subjects and Objects

The subjects in this study were two validators (multimedia content/material experts and multimedia construction experts), then two teachers and 30 fourth grade students at SD Negeri 106789 Tanjung Gusta. In comparison, the object of this research is interactive multimedia based on contextual teaching and learning on theme 6, my ideals, subtheme 1 I & my ideals.

4. Development Procedure

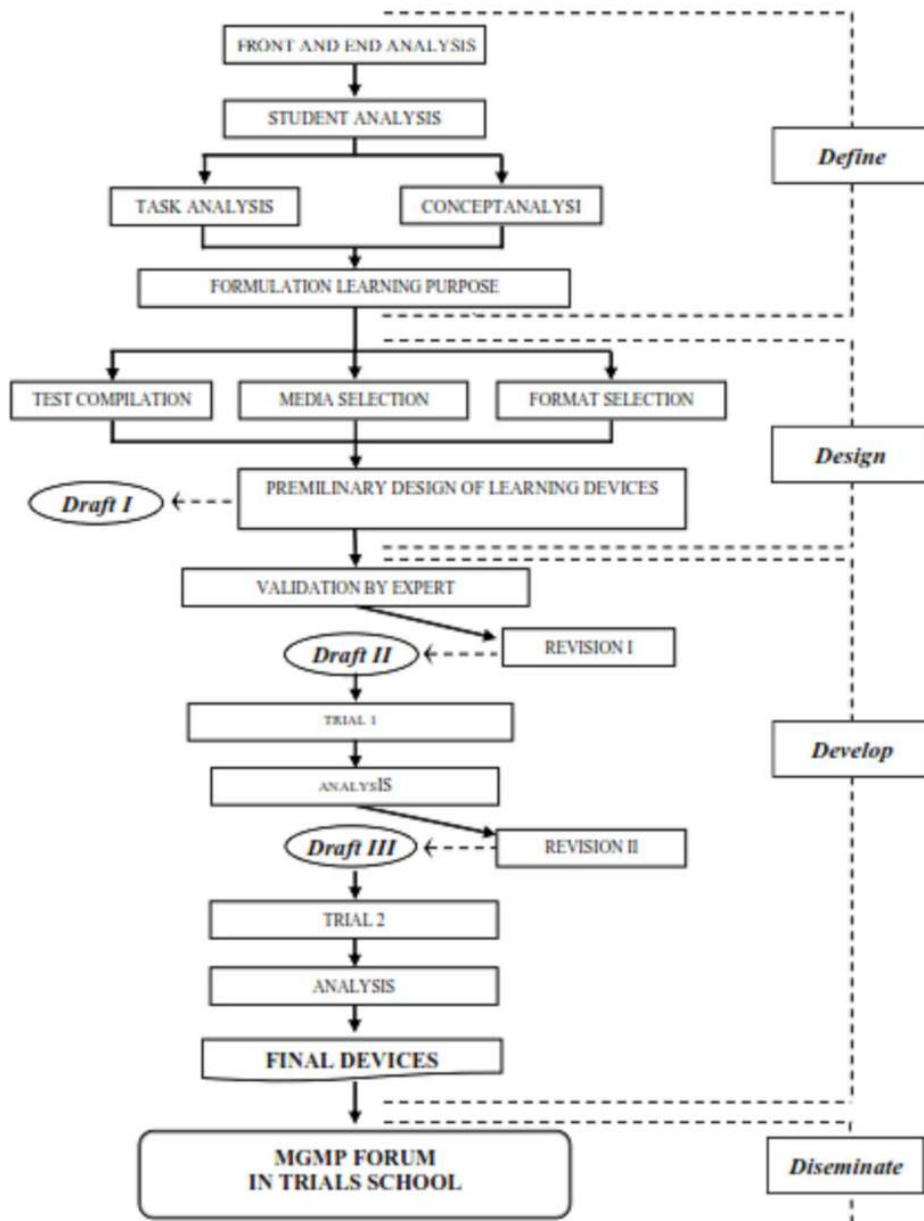


Figure 1. Chart of Learning Media Development Model 4D

5. Data Collection Instruments

To assess the learning media that have been developed in this development research, the following data collection instruments are used:

6. Questionnaire

- 1) Questionnaire for Multimedia Content/Material Experts
- 2) Questionnaire for Multimedia Construction Experts
- 3) Teacher Response Questionnaire
- 4) Test

C. Finding and Discussion

1. Result

Research Results

The objectives of this development research are: (1) to determine the feasibility of interactive multimedia based on contextual teaching and learning on the theme 6 my ideals, subtheme 1 I & my dreams in the fourth grade of SD Negeri 106789 Tanjung Gusta; (2) to find out the effectiveness of interactive multimedia based on contextual teaching and learning on theme 6 my ideals, subtheme 1 I & my dreams in improving student learning outcomes in grade IV SD Negeri 106789 Tanjung Gusta.

Description of Design Phase Results

At this stage, interactive multimedia design based on contextual teaching and learning is carried out on the theme 6 my ideals, subtheme 1 I & my ideals. Learning media is adjusted to the KI and KD set by the curriculum. Furthermore, the assessment instruments of multimedia content/material experts and multimedia construction experts were used to see the feasibility of the learning media development. This design

stage is divided into four activities: test standards, media selection, format selection, and initial design.

Validation Results of Multimedia Content/Material Expert

According to multimedia content/material experts at the first meeting assessment, namely: the guidance and information aspect is worth 3.12 is in the "appropriate" criteria, the multimedia content/material aspect is 3.80 is in the "appropriate" criteria, and the evaluation aspect is 3.44 is in the "eligible" criteria. The results of the expert assessment of multimedia content/materials that were developed were "appropriate" for use with an average score of 3.56.

After being revised following the input provided by content/multimedia material experts, the assessment of the meeting of the two learning media is declared valid. The following describes the results of the expert assessment of multimedia content/materials at the second meeting of interactive multimedia based on Contextual Teaching and Learning on theme 6 my ideals, subtheme 1 I & my ideals.

According to multimedia content/material experts at the second meeting assessment, namely: the guidance and information aspect is worth 4.37 is in the "very feasible" criteria, the multimedia content/material aspect is worth 4.71 is in the "very feasible" criteria, and the evaluation aspect is 4, 5 is in the "very feasible" criteria. The results of the expert assessment of multimedia content/materials developed are "very feasible" for use with an average score of 4.58.

Multimedia Construction Expert Validation Results

According to multimedia construction experts in the assessment of the first meeting, namely: aspects of guidance and information worth 3.17 are in the "not feasible" criteria, aspects of program performance are worth 3.6 are in the "appropriate" criteria, and systematic, aesthetic and

design aspects are worth 3, 58 are in the "adequate" criteria. The results of the expert assessment of the developed multimedia construction are "fit" to be used with an average score of 3.55.

After being revised according to the input given by the multimedia construction expert, the assessment of the meeting of the two learning media was declared valid. The following describes the multimedia construction expert's assessment results at the second meeting of interactive multimedia based on Contextual Teaching and Learning on theme 6, my ideals, subtheme 1 I & my ideals.

According to multimedia construction experts at the second meeting assessment, namely: aspects of guidance and information worth 4.67 are in the "very feasible" criteria, program performance aspects are worth 4.6 are in the "very feasible" criteria, and aspects of systematics, aesthetics, and design principles are worth 4,62 is in the "very feasible" criteria. The results of the expert assessment of the developed multimedia construction are "very feasible" for use with an average score of 4.62.

1. Trial I

Overall, the first trial data analysis of -based learning media *contextual teaching and learning* developed has met the established effective criteria. This can be seen from the posttest scores that have reached classical completeness. Based on the analysis and trial I result, it is necessary to revise the learning media developed to hope that the developed contextual teaching and learning-based learning media can improve student learning outcomes.

The test of learning outcomes given to students consists of pretest and posttest. The pretest is given before learning in each trial, while the posttest is given after learning each trial.

Analysis of Teacher Response Data on Trial I

The teacher's response questionnaire was conducted to determine the appropriate learning media to use. The teacher's response questionnaire was compiled with 4 alternative scores, namely: a score of 1 (more minor); score 2 (enough); score 3 (good); score 4 (excellent). In addition, the teacher's response questionnaire consists of aspects of assessment. Learning media is feasible if the teacher's response assessment aspect is in the minimally good category. After the first trial was carried out, the results of the teacher's response were as follows:

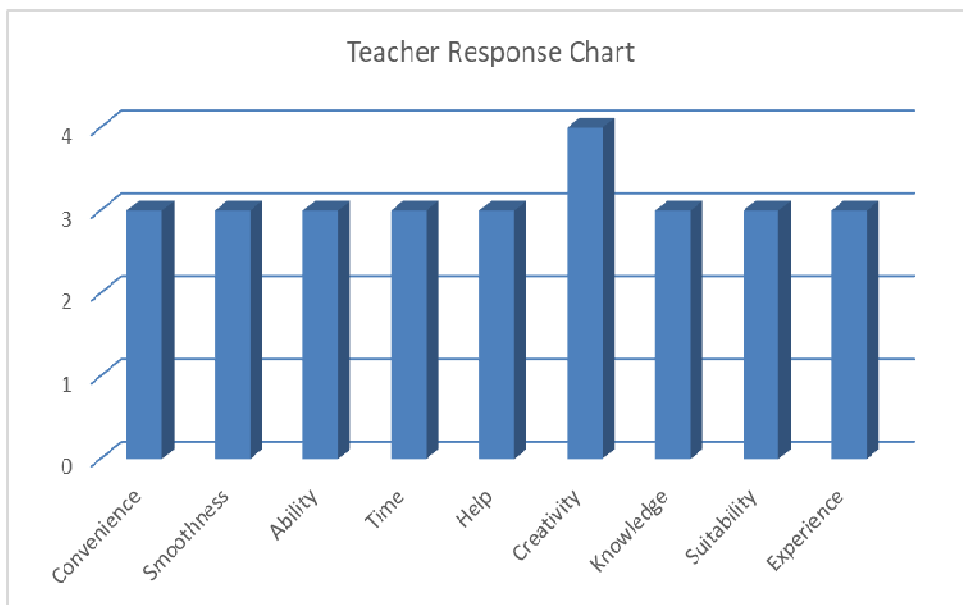


Figure 2. Test Teacher Response Analysis Diagram I

The questionnaire table for the teacher's response to the developed learning media with an average score of 3.1 is included in the very positive category. So seen from the teacher's response, the learning media developed has been classified as very feasible to be used as learning media.

Based on the analysis of the effectiveness of student learning outcomes in the first trial, the percentage of posttest classical completeness of student learning outcomes using learning media is 80%. This states that it has fulfilled classical completeness.

Table 1. Completeness Data on Learning Outcomes

No	Number Range	Frequency	Percentage	Criteria
1	70-100	26	80%	Complete
2	0-69	4	20%	Not Completed
amount		30	100%	

Analysis of Student Learning Outcomes in Trial I

Assessment of student learning outcomes is done by conducting multiple-choice tests using 20 questions. Student learning outcomes can be seen from the average pretest and posttest scores.

The results of calculations using SPSS obtained an average gain value of 0.5. This gain value is then interpreted into the criteria for the gain value, which is in the medium category.

2. Trial II

After conducting the first trial, further improvements were made to produce learning media that met the established effective criteria. The second trial was conducted to measure the effectiveness of student learning outcomes using the developed learning media.

Teacher Response Data Analysis on Trial II

The teacher's response questionnaire was conducted to determine the appropriate learning media to use. The teacher's response questionnaire was compiled with 4 alternative scores, namely: a score of 1 (more minor); score 2(enough); score 3 (good); score 4 (excellent). In addition, the teacher's response questionnaire consists of

aspects of assessment. Learning media is feasible if the assessment aspect of the teacher's response is in the minimally good category. After the second trial was carried out, the results of the teacher's response were as follows:

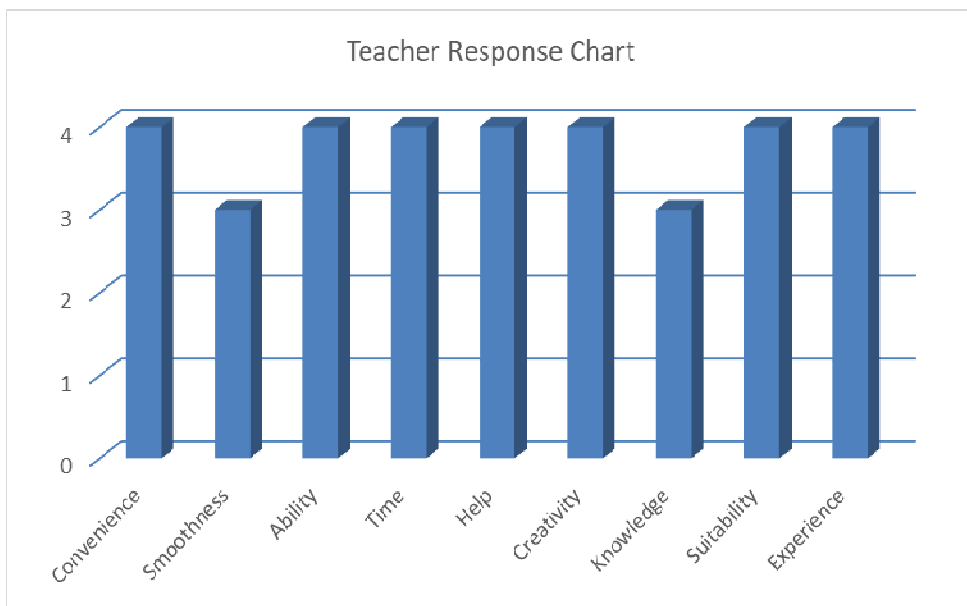


Figure 3. Test Teacher Response Analysis Diagram II

The teacher's response questionnaire to the learning media developed with an average score of 3.7, a very positive category. So seen from the teacher's response, the learning media developed has been classified as very feasible to be used as learning media.

Analysis of the Effectiveness of Student Learning Outcomes in Trial II

In the second trial, students were given 20 multiple choice questions as test instruments in the posttest. In general, the data analysis of the effectiveness of student learning outcomes in the posttest trial II.

Based on the analysis of the effectiveness of student learning outcomes in the second trial, the percentage of posttest classical completeness of student learning outcomes using learning media is 100%.

This states that it has fulfilled classical completeness.

Table 2. Data of Learning Outcomes Completeness

No	Number Range	Frequency	Percentage	Criteria
1	70-100	30	100%	Complete
2	0-69	0	0%	Not Completed
amount		30	100%	

Analysis of Student Learning Outcomes in Trial II

Assessment of student learning outcomes is carried out by conducting multiple-choice tests using 20 questions. Student learning outcomes can be seen from the average pretest and posttest.

The results of calculations using SPSS obtained an average gain value of 0.8. This gain value is then interpreted into the criteria for the gain value, which is in the high category.

Description of the Dissemination Stage Results

At the dissemination stage, it has not been carried out and submitted to the next researcher. This study was carried out until the development stage, and this is because the research objectives have been achieved in the development stage. The product is interactive multimedia based on contextual teaching and learning on the theme 6 my goals, sub-theme 1 I & my dreams, grade IV SD Negeri 106789 Tanjung Gusta.

2. Discussion

Interactive Multimedia Eligibility

According to Yuliawati (2017:130), "the media is one factor that determines the success of teaching because it helps students in and conveys subject matter concerning teaching objectives." The software used to create learning media in this study is Adobe Flash. According to

Majidah, et al. (2016: 96), "adobe flash is the right software to create visual presentations that can interpret various media, such as video, animation, images, and sound." The results of the assessment obtained from the content/multimedia material experts in the first meeting obtained the mean a score of 3.56 with appropriate criteria, and meeting II obtained a mean score of 4.58 with very feasible criteria for interactive multimedia based on Contextual Teaching and Learning in sub-theme 1

The results of the assessment obtained from the multimedia construction expert in the first meeting obtained a mean score of 3.55 with appropriate criteria, and the second meeting obtained a mean score of 4.62 with very decent criteria for interactive multimedia based on Contextual Teaching and Learning in sub-theme 1 I & my ideals in fourth-grade elementary school Land 106789 Tanjung Gusta.

Effectiveness of Interactive Multimedia

After the first trial, the posttest average score was 70, with a PKK value of 80%. The increase in student learning outcomes was analyzed using n-gain obtained from the pretest and posttest scores. The average gain of n-gain is 0.5, which is categorized as moderate because the gain is < 0.7 . Furthermore, the second trial was conducted to obtain an average posttest score of 91 with a PKK value of 100%. The increase in student learning outcomes was analyzed using the n-gain obtained from the pretest and posttest scores.

The average gain of n-gain is 0.8, which is categorized as high because the gain is > 0.7 . Therefore, student learning outcomes are categorized as increasing after using learning media. The results of this study are also in line with previous research conducted by Nur Hadiyan Rizkiyanto (2018), who mentions that the learning media that has been developed is very effective in the student learning process in the

classroom with the results of calculating the percentage of class completeness as much as 93%. Another research by Giri Prasetyo (2016) shows that this interactive multimedia software is feasible and effective in improving student achievement.

The feasibility of this multimedia can be seen from the assessment of the results of media validation by material experts on the aspect of material accuracy of 4.5; the aspect of the breadth of the material is 4, the aspect of the completeness of the material is 4.5; aspects of material clarity of 4.6; the aspect of up-to-date material is 4.5; the systematic aspect of the material is 4.5, the results of the validation by media experts from the aspect of content and media objectives have an average score of 3.8; The media instructional quality aspect has an average score of 3.7 and the media technical quality aspect has an average score of 4.1. In comparison, the effectiveness of this multimedia can be seen from the average percentage increase in the value between the pretest and posttest scores with an average initial field trial of 54.7%, a field trial of 44.7%, and a field test of 31.7%. With the average percentage increase in value between the pretest and posttest of 43.7%, it is used in learning. In addition to the above, it can also be seen that the results of the teacher's response analysis in the first trial with a score of 3.1 the media were very feasible, but there were still some errors in the media that had to be corrected, so that the learning media were practical and suitable for use in the learning process.

The error is in the font that does not match the background. After making improvements to the media, the researchers conducted the second test. The teacher's response score in the second trial was 3.7. Based on these responses, it can be concluded that the adobe flash-based

learning media that was developed is very feasible, with an average teacher response score of 3.4.

D. Conclusion

Based on the results of the analysis and discussion in this study, the following conclusions are put forward:

1. Interactive multimedia based on Contextual Teaching and Learning on the theme 6 my ideals, sub-theme 1, I and my dreams, developed is suitable for use in fourth-grade students of SD Negeri 106789 Tanjung Gusta.
2. Interactive multimedia based on Contextual Teaching and Learning on theme 6 my ideals, subtheme 1 I, and my ideas developed effectively to improve the learning outcomes of fourth-grade students at SD Negeri 106789 Tanjung Gusta.

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