

Development of Role Playing Based on Traffic Sign Miniature Learning Media in Elementary Schools

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General Background: In an era where traffic discipline is increasingly neglected, **Specific Background:** instilling traffic rule awareness from an early age is critical. The Indonesian subject for grade III elementary students includes material on traffic signs. **Knowledge Gap:** However, conventional teaching methods relying on lectures and textbooks often lead to student disengagement, especially when interpreting symbolic traffic signs. **Aims:** This study aims to develop a role-playing-based miniature traffic sign learning media to enhance student comprehension and engagement. **Results:** Utilizing the ADDIE Research and Development model, product validation involved media, material, and language experts, as well as students. Validation results showed scores of 90% (media), 88.5% (material), and 90% (language), while student responses reached 96%, all categorized as "Very Feasible". Student learning outcomes also improved significantly, with pretest and posttest averages rising from 52.5 to 80.5. **Novelty:** This media integrates hands-on, interactive learning with role-play to bridge cognitive challenges in understanding abstract symbols. **Implications:** The findings suggest that such innovative media can substantially increase student motivation and achievement, offering a replicable model for similar educational challenges.

Highlights:

- Increases student engagement through interactive role-play.
- Significantly improves learning outcomes on traffic sign material.
- Validated as highly feasible by experts and student responses.

Keywords: Learning Media, Role-Playing, Traffic Signs, Elementary Education, Indonesian Language

Introduction

Education is a conscious and planned effort to create a learning atmosphere and learning process so that students are more active in developing their potential to have religious spiritual strength, self-control, personality, intelligence, noble morals, and skills needed by themselves and society [1]. Education is like a forum for the children of the next generation of the nation to be able to get various scientific knowledge and other skills [2]. Education is the spearhead to produce the nation's generation so that they can become a superior and quality generation [3]. Education can be obtained through formal, non-formal, and informal channels [4] such as schools, Islamic boarding schools, tutoring, and so on. Schools as one of the formal educational institutions have a very important role in educating children to have broad knowledge, both in terms of general knowledge and religious knowledge. Through learning at school, it is hoped that children will have good characteristics such as having a polite attitude, caring, and mutual respect [5]. This attitude is also a basic attitude that children must have to be able to establish harmonious relationships between others [6].

However, every day this basic attitude began to fade. Currently, there are a lot of people who ignore the applicable norms and rules. Examples such as traffic violations. In fact, the purpose of making norms is so that people can comply with social values so that order and peace are created in society [7]. In this case, school has an important role in shaping children's character. If the child has been instilled with good character from an early age, then this character will be embedded in him when the child grows up [8]. Therefore, traffic education can start when children enter school age, not just when they are adults. In grade III of elementary school in the subject of Indonesian there is one of the materials that discusses traffic signs, this is one of the effective ways to provide education to children about the importance of learning traffic signs. However, at the age of 7-11 years old, children's cognitive abilities are still limited to concrete/tangible things that can be captured by the five senses [9]. So they will have difficulty if they are faced with abstract things, such as traffic signs. So there needs to be tools such as learning media.

Learning media can be used as an intermediary between teachers and students in understanding learning materials to be more effective and efficient [10]. The media used by teachers can be pictures, graphics, films, and others, which aim to stimulate students in the learning process [11]. The use of learning media can make it easier for teachers to convey the information contained in the material being taught, so that students can more easily understand the material being studied [12]. In addition to the use of media as a tool to convey material, teachers are also required to create interesting and innovative learning so that students can be enthusiastic in participating in learning in the classroom.

Based on observations and interviews conducted with third-grade teachers of SDI Darussalam Dungmas on February 12, 2023. The researcher observed that, during the learning process, there were still many students who did not pay attention to the teacher, such as talking to their friends, were less active in asking questions, and there were some students who were sleepy during learning. The researcher also asked several questions related to traffic signs, and it turned out that there were still many third-grade students who had difficulty understanding traffic signs. Its shape, which is only in the form of symbols and images, makes it difficult for them to distinguish and mention their meaning. In addition, the learning process is still centered on the teacher by using lecture methods, and textbooks as support in the learning process. This can be one of the factors that cause students to have difficulty in understanding the material being taught. Especially if the material is abstract such as traffic sign material. Therefore, efforts can be made to overcome these problems, namely by using the right learning methods and learning media according to the needs of students. For example, by using role-playing-based miniature traffic sign learning media in Indonesian subject traffic sign material.

Miniatures are copies of the model of the original object, but on a smaller scale [13]. Miniatures help students know the details of an object that is the topic of discussion in 3 dimensions. Miniature traffic signs are learning media in the form of highway minatur along with traffic signs, which can be used for driving simulations to make it easier to understand traffic signs.[14] Miniature traffic signs are made in various stages, starting from preparing tools and materials, designing, and creating the media. The developed media is made of ACP material (*Aluminium Composit Panel*) is a rectangular shape measuring 80x120 cm that can be folded to resemble a suitcase. Inside there are miniature highways, parks, traffic signs, LED traffic lights, and various buildings that are made as close as possible to resemble the original objects.

In addition to the use of media, teachers must be able to create interesting learning designs, so that they can make

students more active and enthusiastic in participating in learning, such as through the role playing method. *Role playing* (role playing) is a learning method that emphasizes students to participate in role play in demonstrating social problems [15]. The social problems played by students adjust to the material being studied. Development of Traffic Sign-Based Miniature Learning Media *role playing* The aim is to make it easier for students to understand traffic sign material in a concrete/real way, by participating in simulating driving on the highway using miniature traffic signs.

This research is based on previous research entitled "Application of Interactive Learning Models with Miniature Media to Improve Science Learning Outcomes in Elementary Schools". The results of this study stated that there was an increase in science learning outcomes using miniature media, as evidenced by the classical learning completeness which increased in cycles I and II [16]. This opinion is strengthened by a study entitled "Introduction of Traffic Signs as a Learning Tool for School Children of SDN 02 Kesek Using Miniature Cardboard Learning Media". Showing that the use of miniature cardboard learning media for traffic signs can help students see traffic signs in real life and foster a sense of traffic obedience from an early age [17]. In the study entitled "Method *Role Playing* in Improving the Learning of Grade 3 Students of Indonesian Language Subjects at SDI Nurul Qur'an, Abung Tengah District, North Lampung Regency". Showing an increase in learning activities and student learning outcomes using the *role playing*. In the first cycle the average score was only 65.9, and in the second cycle it increased to 71.15. The increase in average scores has a positive impact on improving student learning completeness [18].

Therefore, the researcher developed a role-playing-based miniature traffic sign learning media which is expected to be able to improve students' learning and understanding related to traffic sign material. Because the media has been adapted to the characteristics of low-grade students who still like to play. So that this media is packaged in the form of games so that students are enthusiastic in participating in learning, and it is easier to understand the material being taught. Based on this description, the researcher is interested in further studying "Development of Role Playing Based on Miniature Traffic Sign Learning Media in Indonesian Language Class III SDI Darussalam Dungmas".

Method

The research methods used in this study are research and development (*Research and Development*). Research and development methods are methods that produce a specific product or medium, and test the effectiveness of the developed product [19]. The development model used in this study is the ADDIE development model (*Analysis, Design, Development, Implementation, and Evaluation*) [20]. Through these five stages, the researcher obtained a miniature learning media product for traffic signs. The data collection techniques used in this study were interviews, observations, questionnaires and tests. Interviews were conducted on February 12, 2023 with third-grade teachers of SDI Darussalam Dungmas and observations were carried out to obtain direct data related to the objects to be researched by analyzing the curriculum, student characteristics, and student needs. Meanwhile, the questionnaire is for assessment and response regarding the developed products and tests to measure student competence through *Pretest* and *posttest*.

Research instruments The instruments used were interviews, observations, and questionnaires. This study uses two data analysis techniques, namely: 1) Qualitative descriptive analysis technique to process data from review results from three expert validators and students. 2) Quantitative descriptive analysis to process data obtained through questionnaires in the form of descriptive percentages [21]. Data analysis uses a validation questionnaire to determine the level of validity of the product developed through validation tests from media experts, material experts, and linguists. The data processing formula is:

$$P \times 100\% = \frac{\sum x}{\sum xi}$$

Information:

P = Presentase

$\sum x$ = Total score obtained

$\sum xi$ = Total total score

Percentage (%)	Validity level	Information
$84 < \text{score} \leq 100$	Very valid	No revision
$68 < \text{score} \leq 84$	Valid	No revision
$52 < \text{score} \leq 68$	Quite valid	Partial revisions
$36 < \text{score} \leq 52$	Invalid	Revision
$20 < \text{score} \leq 36$	Very Invalid	Revision

Table 1. Qualification Eligibility Level Based on Percentage

The student response questionnaire was used to analyze student responses to learning activities using miniature traffic sign media. The number of student responses obtained is then interpreted on the score be

Percentage of student responses (%)	Information
20% - 35,99%	Ineffective
36% - 51,99%	Less Effective
52% - 67,99%	Quite Effective
68% - 83,99%	Effective
84% - 100%	Highly Effective

Table 2. Interpretation of Student Response Sheet Scores

Researchers also conducted product trials using *pretest* and *posttest* in small group and large group trials to analyze differences in student learning outcomes before and after using media.

Results and Discussion

This research produces a product in the form of miniature traffic sign learning media based on *role playing* in the Indonesian subject of traffic signs material in grade III SD/MI. This study uses the R&D method (*Research and Development*) ADDIE's development model consists of 5 stages, namely: (*Analysis, Design, Development, Implementation, and Evaluation*) [22]. The first stage is analysis, the researcher analyzes the curriculum, characteristics and needs of students. The results obtained from observations and interviews are, students have difficulty understanding traffic signs. The learning process is still centered on the teacher by using lecture methods, and textbooks as support in the learning process. When the learning process students do not pay attention to the teacher, such as talking to their friends, they are less active in asking questions, and there are some students who are sleepy during learning.

Based on the results of the analysis, the researcher developed a miniature traffic sign learning media based on *role*

playing. Learning media can be used as an intermediary between teachers and students in understanding learning materials to be more effective and efficient [10]. Miniatures are copies of the model of the original object, but on a smaller scale [23]. Miniatures help students know the details of an object that is the topic of discussion in 3 dimensions (Munadi, Y). Miniature traffic signs are learning media in the form of highway minatur along with traffic signs, which can be used for driving simulations to make it easier to understand traffic signs [14]. In addition to the use of media, teachers must be able to create attractive learning designs, so that they can make students more active and enthusiastic in participating in learning, such as through the *role playing* (role-playing).

Role playing (role playing) is a learning method that emphasizes students to participate in role play in demonstrating social problems [15]. The social problems played by students adjust to the material being studied. Development of Traffic Sign-Based Miniature Learning Media *role playing* The aim is to make it easier for students to understand traffic sign material in a concrete/real way, by participating in simulating driving on the highway using miniature traffic signs.

This research is based on previous research entitled "Application of Interactive Learning Models with Miniature Media to Improve Science Learning Outcomes in Elementary Schools". The results of this study stated that there was an increase in science learning outcomes using miniature media, as evidenced by the classical learning completeness which increased in cycles I and II [16]. This opinion is strengthened by a study entitled "Introduction of Traffic Signs as a Learning Tool for School Children of SDN 02 Kesek Using Miniature Cardboard Learning Media". Showing that the use of miniature cardboard learning media for traffic signs can help students see traffic signs in real life and foster a sense of traffic obedience from an early age [17]. In the study entitled "Method *Role Playing* in Improving the Learning of Grade 3 Students of Indonesian Language Subjects at SDI Nurul Qur'an, Abung Tengah District, North Lampung Regency". Showing an increase in learning activities and student learning outcomes using the *role playing*. An increase in students' average scores has a positive impact on improving student learning completeness [24]

The second stage is design, the researcher develops a miniature learning media for traffic signs which is designed to resemble a suitcase which contains miniature highways equipped with buildings, public facilities, and of course traffic signs. The media is equipped with a manual and story questions that can be used to conduct driving simulations. Through the medium of miniature traffic signs based on *role playing*, children will find it easier to learn traffic signs directly through driving simulations on the highway using miniature traffic signs.



Figure 1. Miniature Luggage Traffic Sign

The third stage is the development, development of miniature traffic signs begins with preparing tools and materials, designing, and making the media. The media is made of ACP (*Aluminum Comcomposite Panel*) material in a rectangular shape with a size of 80x120 cm that can be folded to resemble a suitcase. Inside it is made into a miniature highway equipped with parks, fields, trees, buildings, and led traffic lights that students can use to simulate driving and learn about traffic signs.



Figure 2. Role Playing Based Traffic Sign Miniature Media Products

The media that has been created is then validated to lecturers of media experts, material experts, and linguists to find out the feasibility of the media. Media validation results 90%, subject matter experts 88.5%, linguists 90%, the percentage is included in the category of "Very Feasible" and does not need to be revised [19], so that miniature media Traffic signs can be tested on students.

Trial Subject	Validity Results	Information
Media Member	90%	Highly Worth It
Material Expert	88,5%	Highly Worth It
Linguist	90%	Highly Worth It

Table 3. Percentage of Product Validity Results According to Experts

The fourth stage is implementation, the media is tested to grade III students of SDI Darussalam Dungmas totaling 20 children. The researcher used *pretest* and *posttest* in small group and large group trials to determine student learning outcomes before and after using learning media. Then the researcher distributed the questionnaire response sheet to all grade III students, students were only asked to give answers (Agree and Disapprove) which contained responses to the learning media and the learning process that had been carried out. The result is: the number of "Agree" answers is 194, and the number of "Disagree" answers is 8. The percentage results obtained are 96% which means that the miniature learning media of traffic signs is very effective in learning.

Percentage of student responses (%)	Information
96%	Highly Effective

Table 4. Interpretation of Student Response Sheet Scores

The fifth stage is evaluation, the media is tested on grade III students, and it turns out that the response of teachers and students to the miniature media of traffic signs is very good, because with this media it is easier for students to understand traffic signs. It is evident from the increase before and after the use of media. When *Pretest* students get an average score of 52.5 and *posttest* got an average score of 80.5. From this data, an increase of 28 was obtained. This shows that students' understanding has increased [25].

Conclusion

Based on the research conducted, it can be concluded that the development of miniature learning media for traffic signs uses the *ADDIE model research and development method*, namely *Analysis, Design, Development, Implementation, and Evaluation*. The results of the study are: role-playing-based miniature traffic sign learning media is very feasible to be used as an Indonesian learning medium in traffic sign material in grade III SDI Darussalam Dungmas. The results of the validation test were 90% media experts, 88.5% material experts, 90% linguists, and 96% student response questionnaires with the category "Very Feasible". The average score of students also increased with *pretest results* of 52.5 and *posttest results* of 80.5.

Advice to researchers next, to pay attention to factors that affect student learning outcomes. Because with this research, it can be known that one of the determining factors for student learning success can be known.

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