Development of Smart Play Wheel Learning Media to Improve Student Learning Outcomes in Islamic Elementary schools

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Abstract. This research is motivated by a phenomenon that occurs in the learning outcomes of students of class 3 semester one at Islamic Primary School Nurul Huda Ngampelsari Sidoarjo. Learning outcomes show does not meet the minimum completeness criteria with a p-value of 75 in the material of faith in the angel lessons Aqeedah Morals. This research and development aim to produce learning media for the spinning of the smart wheel in learning the morality of Aqidah's material religion in the angels of God. This type of research is a type of research and development. The development model used by researchers is the Borg and Gall development model with nine stages of learning design. The results of the development of smart spinning wheel learning media meet the criteria with the results of content expert validation reaching 100%. The validation results of the design experts reached 100%. The results of individual trials reached 100%. The results of small group trials were 83%. The results of a large group trial reached 94.67%. The results of t-test analysis with a significance level of 0.05 indicate the p-velocity value of the t-test statistic was 0.00 < 0.05, it can be concluded that Ho was rejected and Ha was accepted. This shows that there is a significant effect on the pre-test and post-test mean values. The conclusion is the smart wheel learning media that was developed effectively in improving student learning outcomes for 3rd semester one students at Islamic Primary School Nurul Huda Ngampelsari Sidoarjo.

Keywords: media development, smart play wheel, learning outcomes

1 Introduction
The 2013 Islamic primary school curriculum [1]–[4] has explained that the Aqeedah Moral subject in the Islamic Elementary Schools. Aims to equip students in developing through giving, fertilizing, and developing knowledge, comprehension, practice, habituation, and student experience about Islamic Aqeedah to become a Muslim who continues to build his faith and
devotion to Allah SWT.

In carrying out their duties as an educator, the teachings of Islam are the principal source of the teacher as a foundation in steps to develop the student's character. As mentioned in the word of Allah SWT in Surah Ali-Imran verse 110:

It means: "You are the best people who are born for humans, tell the ma’ruf, and prevent evil." (Q.S. Ali Imran / 3: 110) [5]

From this explanation, to realize the objectives of national education and the quality of civic education depends on the teacher. The teacher has a vital role in managing and creating an atmosphere in the classroom and supporting the process of teaching and learning activities[6], [7].

The submission of learning materials by teachers must be mastered by students to achieve reasonable learning goals. Learning media [8], [9] is a means to facilitate teachers in delivering learning material. With the learning media, students will more easily understand the content addressed by the teacher. The learning media acts as an intermediary to facilitate the learning process to achieve the objectives in teaching effectively and efficiently.

Learning media is one of the essential elements in the learning process. Learning media is a tool or means of communication that aims to make teaching and learning[10], [11] effectively. Students in elementary school learning activities need the use of learning media because Piaget [12], [13] states in his cognitive theory that elementary school-age children are a concrete operational stage. At this stage, children think logically about specific events and classify objects in different forms.

Based on observations and interviews with the subject of Aqeedah[14], [15] moral class 3 at Nurul Huda Islamic Primary School, whose address is in Ngampelsari Village, Candi District, Sidoarjo Regency, Indonesia, on July 24, 2018. Information obtained in the process of learning Aqeedah's moral material is faithful to God. Submission of content by the teacher only uses the lecture method, refers to textbooks and student worksheets, causing student boredom, and some students are busy themselves. This makes learning less effective, so the learning outcomes of some students do not meet the minimum completeness value criteria set by the school.

From the explanation above, the researcher conducted a development study entitled "Developing Smart Turning Wheel Learning Media to Improve Student Learning Outcomes in Class 3 Learning at Nurul Huda Ngampelsari Islamic Primary School, Candi, Sidoarjo, Indonesia". By paying attention to the learning process of students, it is expected that the accuracy of media selection and learning methods will affect student learning outcomes.

## 2 Method

The research method used in this study is the Borg & Gall Research and Development (R&D) model[16], which is research that is used to produce specific products, and test the feasibility and effectiveness of these products. In this research, the product developed by the researcher is in the form of a smart wheel learning media for the subject of aqidah morality of the material of faith in Allah grade 3 Islamic elementary school. The population in this study was grade 3 students of the Islamic elementary school Nurul Huda Ngampelsari, Candi, Sidoarjo Indonesia totaling 25 students. Data analysis techniques in this study used tests, questionnaires, and interviews.

## 3 Results and Discussion

### 3.1 The application of the learning media of the smart wheel

The development of instructional media[17]-[19] is an effort to prepare learning media programs that are more directed at the media. Media that will be displayed in the teaching and learning process must first be planned and designed according to the needs of students. This development
aims to refine the media that has been applied to be more perfect. Perfect in terms of design, characteristics and can maximize learning objectives to be achieved.

The Rotating Wheel is a circular and pictorial tool that can be rotated on its axis so that it will eventually stop at one part of the image that can be used as a learning medium[20]. The smart spinning wheel is a means of playing in the form of numbered wheels, which are played by spinning. This rotary wheel media will be carried out by students to support the learning process. The spinning wheel game is also supported by question cards to make the game more interesting, so the process does not seem monotonous.

Spinning wheel learning media is the development of a roulette game, one of the most famous board games in the world, which are commonly called the small wheel game. The wheel of fortune is a learning model that uses a rotary motor.

Learning outcomes are a highlight of the learning process[21], [22]. Learning outcomes are changes in behavior in students that can be observed and measured in the form of changes in knowledge, attitudes, and skills. This change is interpreted as improvement and better development.

3.2 Results
Content experts and design experts have validated the learning media of the smart wheel on the material of faith in the angels of Allah grade 3 Islamic elementary school.

Content expert validation, which was carried out, showed the percentage of the achievement level of 100% was in good qualification and appropriate so that the learning media did not need revision. Validation of design experts, which was carried out, resulted in the percentage of the achievement level of 87.5% being in proper qualifications and appropriate so that the learning media did not need to be revised. Design expert comments and suggestions were made revisions to perfect the learning media.

3.2.1 Trials
The effectiveness of this smart wheel learning media can be seen from the results of field trials, which are conducted to find out the improvement in student learning outcomes after the application of learning media on the smart wheel on the wheel of faith in faith in God.

The product trial was conducted at grade 3 Islamic elementary school student Nurul Huda Ngampelsari Sidoarjo. Thirty-one students were divided into one student into individual tests; five students become limited trials or small groups. Twenty-five students become field trials or large groups.

An individual trial with one student showed that the percentage of 100% achievement rate was a reasonable and appropriate qualification so that the smart wheel media material had faith in God for grade 3 Islamic primary school Nurul Huda Ngampelsari Sidoarjo declared worthy of use. A small group trial was conducted on five students, showing that the percentage achievement rate of 83% in the qualifications was appropriate and appropriate, so that the smart wheel media material from faith in God was declared worthy of use.

A large group trial was conducted on 25 students, showing that the percentage level of achievement of 94.67% in the qualifications was appropriate and appropriate so that the smart wheel media from the material of faith in God was declared worthy to be used.
3.2.2 Feasibility Test

T Test, Pretest and Posttest Results

**Figure 1.** Paired Samples Statistics

| Mean | N  | Std. Deviation | Std. Error Mean |
|------|----|----------------|-----------------|
| Pair pretest | 56.4400 | 25 | 13.69331 | 2.73866 |
| 1 posttest | 76.5200 | 25 | 9.44334 | 1.88867 |

**Figure 2.** Paired Samples Correlation

| N  | Correlation | Sig. |
|----|-------------|------|
| Pair Pretest & Posttest | 25 | .640 | .001 |

**Figure 3.** Paired Samples Test

| Paired Differences | 95% Confidence Interval of the Difference | Sig. (2-tailed) |
|--------------------|----------------------------------------|----------------|
| Mean               | Std. Error Mean | Lower | Upper | t | df |
| Pair pretest – posttest | -2.0080 | 0E1 | 10.53929 | 2.10786 | -24.43041 | 15.72959 | -9.526 | 24 | .000 |

Based on the mean or average value in figure 1, it can be seen the difference between Pretest and Posttest learning outcomes. Pretest results show an average value of 56.44, and Posttest results show an average value of 76.52. Therefore the p-value of the t-test statistic is 0.00 <0.05, so it can be concluded that Ho is rejected and Ha is accepted. This means that there is a significant influence on the average pretest and posttest scores. This data shows that there is a significant increase in average student learning outcomes after receiving a new treatment that is the application of the smart wheel learning media.

These learning outcomes also affect the effectiveness of learning, because one of the learning criteria is said to be effective if the value or student learning outcomes are complete, above the minimum completeness criteria value. Previously, before using the smart spinning learning media, the pretest results were below the minimum completeness criteria value. Then after using the smart wheel media, the average value of students becomes above the value of the minimum completeness criteria.

The explanation above explains that the smart media wheel of faith in the angel of God is effectively used in the learning process because the material about faith in God can be a role model for students in their daily lives and improve student learning outcomes.

3.2.3 Effectiveness Test

**Figure 4.** Correlations

| Mean | Posttest | Media |
|------|----------|-------|
| Pair Person | 1 | .265 |
| Sig(2-tailed) | .201 |
| N | 25 | 25 |
| Media Person | .265 | 1 |
| Sig(2-tailed) | .201 |
| N | 25 | 25 |
Figure 4 illustrates the relationship between smart wheel learning media. Pearson correlation is used to measure the closeness of the relationship between the two variables. The correlation value is 0.265 (positive correlation).

| Model | R   | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-----|----------|-------------------|--------------------------|
| 1     | 0.265a | 0.070   | 0.030            | 9.30161                  |

R = 0.265, the magnitude of the coefficient. The correlation between the learning media of the smart wheel (independent variable) with student learning outcomes (the dependent variable).

R Square of 0.070 means 7%. This shows that the change in student learning outcomes is determined by the smart wheel learning media by 7%. In contrast, the 93% increase in student learning outcomes is determined by other variables outside the variables in this study. So that interpretation can be made that the learning media of the smart spinning wheel is quite influential on the learning outcomes of third-grade students of the Aqeedah morality material of faith in Allah.

4 Conclusion

This research and development uses the Borg & Gall development model and produces a product in the form of a learning media for the smart wheel of the material of faith in the angel of Allah in grade 3 students of Islamic elementary schools. The product has been designed to be as attractive as possible so that it matches the character of students, mainly grade III at the Madrasah Ibtidaiyah or Elementary School level. In this study, researchers chose to develop learning media that is expected to help students improve understanding of the material in the learning process, especially the subject of aqidah morals.

The feasibility level of this smart wheel learning media is obtained based on the assessment of experts, including content experts and learning design experts. The results of the validity of the content experts reached a percentage of the validity of 100%, which means the material on this smart wheel learning media is valid or feasible to use. While the results of the validity of the design experts reached a percentage of the validity of 100%, which means the material on the learning media of the smart wheel is valid or feasible to use. Based on the results of the assessment, the smart spin wheel learning media is appropriate.

The level of effectiveness of the learning media of the smart spinning wheel was obtained from student learning outcomes based on field trials analyzed with SPSS 16. The results of the t-test analysis of the pretest scores showed an average value of 56.44, and the posttest results showed an average value of 76.52. Because the p-value of the t-test statistic is 0.00, which means (<0.05), it can be concluded that Ho is rejected and Ha is accepted. This means that there is a significant influence on the application of the learning media of the smart wheel. Thus the learning media of the smart wheel can be said to have good quality. This is because the use of smart spinning learning media can help students more easily understand the material in the learning process so that it can improve student learning outcomes.

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