ABSTRACT

This research aims at examining the development of the integrative thematic textbooks for the elementary school students and the impact of the textbooks towards their learning. This research was designed using Research and Development (R&D) using AwARDIE model which was developed from the ADDIE model. Research participants involved experts, teachers and students. Data was collected through interviews, document analysis, questionnaires and Focus Group Discussion methods. To analyse the data, some statistical formulas were used, such as: Levene, Kolmogorov-Smirnov, t-test and Omega Squared. The findings show that the integrative thematic textbooks have high validity based on the experts and practitioners’ judgements. In addition, the textbooks developed are proven to be effective to improve the students’ learning.

Keywords: Integrative thematic textbooks, AwARDIE model, impact
INTRODUCTION

Based on preliminary research, the use of several separate textbooks with various themes confused the understanding of the first graders at Islamic elementary school, also known as Madrasah Ibtdaiyah (MI) in Salatiga, Central Java, Indonesia. According to the teachers, the use of several textbooks with various themes was not appropriate to the condition of MI students who have integral thinking characteristics. These separate textbooks including Fiqh, Al-Qur'an Hadith, Aqidah Akhlak and Arabic textbooks, are used during the learning process in the first graders of MI.

The use of such separate textbooks has caused various problems. For instance; the teacher has difficulty in managing lesson schedules, the students have difficulty in preparing textbooks, the materials in thematic textbooks are not synchronous with the materials in religious textbooks, teachers and students have difficulty in determining learning objectives, and teachers have difficulty in assessing student learning outcomes.

To solve the problems, according to the teachers’ opinion, a textbook that can integrate all subjects is needed. This integration is considered important which can adjust the characteristics of MI students. Rahayu and Hidayah (2014) argued that MI students see everything as a whole or holistic. This integral way of thinking is in accordance with the views of Gestalt theory, General Theory of System Approach and Schema theory. Gestalt theory views that humans cannot understand stimuli separately, but stimuli are understood simultaneously into meaningful configurations (Arip et al., 2013; Forti, 2015; Hidayati, 2011). The General Theory of System Approach views the importance of learning that involves multidisciplinary (Ramosaj, 2014). Schema theory views human perception and understanding as a combination of previous knowledge and experience as a whole and full of meaning (An, 2013; Davis, 2013; Heo et al., 2011). Therefore, this study is intended to develop an integrative thematic textbook that can integrate all subjects into one book.

LITERATURE REVIEW

In the guidelines for textbook assessment published by the Curriculum Centre of Research and Development Agency, Ministry of Education and Culture in 2015, the assessment of textbook quality is based on material, presentation and language components.

The material components in the textbook should consider several aspects such as the learning objectives, the development of science, the diversity of students, its ability to increase student knowledge, its accuracy and its ability to support learning activities (Mahmood et al., 2009; Muljono, 2007; Muslich, 2010; Sinaga et al., 2017). The material in textbooks should also consider gender equality and non-discrimination, to provide space for diversity (Atay & Danju, 2012; Llorent, 2012; Raguindin, 2020; Sović & Hus, 2015), and the socio-cultural context (Farzaneh et al., 2014; Mortari & Ubbiali, 2017; Tüm & Uğuz, 2014).
Textbooks need to be well presented in order to attract students’ interest. Teaching materials will have an impact, if the presentation and content are interesting (Harsono, 2007). It is argued that to present a good textbook it is necessary to pay attention to the type and size of the letters, to have a complete and detailed table of contents, each lesson to be given an appropriate title, to have a list of words and to have a complete bibliography (Badea & Iridon, 2015). Çobanoğlu et al. (2009) reported that visualisation of material is related to image quality. Soleimani and Mohammadi (2012) stated that font size affects reading speed, reading from 12 pt font size book is faster than 10 pt font size, but font type and spacing have no effect on reading speed.

Textbooks need to be arranged in a good language to ease the students to understand them. According to Kurbaita et al. (2013), textbooks are written using applicable language rules. The grammar and vocabulary for writing textbooks should be adjusted to the abilities and differences in student learning styles (Mohammadi & Abdi, 2014). The number of sentences in the textbook needs to be adjusted according to the age of the students (Izgi & Seker, 2012). Mahmood et al. (2009) stated that in order to be easy to understand, textbooks need to be written clearly and use an attractive writing style.

Good textbooks can affect the learning process and can improve student learning outcomes. Some scholars argued that the material in textbooks can improve the learning process (Badea & Iridon, 2015; Sinaga et al., 2017). Textbooks are one of the main factors to obtain knowledge taught in schools (Franzolin & Bizzo, 2015), as a learning resource and support to increase student knowledge (Behnke, 2018; Elvita et al., 2019). Textbooks as the main source of education are efficient tools to achieve learning outcomes (Aslan, 2010). Asri (2017) stated that the quality of textbooks also determines learning outcomes. Kurbaita et al. (2013) clearly stated that thematic learning textbooks can improve student learning outcomes.

The textbook must be adapted to the characteristics of the students. The characteristic of MI/SD students is that they have integrative thinking (Curriculum Centre of Ministry of Education Affair, 2006). This is in accordance with the viewpoint of the Gestalt theory that humans cannot understand stimuli separately, but stimuli are understood simultaneously into meaningful configurations (Arip et al., 2013; Forti, 2015; Hidayati, 2011). The General Theory of System Approach views the importance of learning that involves multidisciplinarity (Ramosaj, 2014). Schema theory views human perception and understanding as a combination of previous knowledge and experience as a whole and full of meaning (An, 2013; Davis, 2013; Heo et al., 2011). The use of the thematic-integrative learning approach is appropriate for MI students who have characteristics of integrative thinking (Abduh, 2014; Barus & Djukri, 2013; Prastowo, 2014; Rahayu & Hidayah, 2014).
METHODOLOGY

This research used Research and Development (R&D) design, while the product developed was an integrative thematic textbook that combines the five subjects taught in MI level as mentioned previously (Thematic, Fiqh, Al-Qur’an Hadith, Aqidah Akhlak, Arabic).

The product was developed using the AwARDIE model which is a modification of the ADDIE model. AwARDIE is derived from ADDIE which was then developed by adding the Awareness of Problem and changing the Design stage into the Redesign stage. The ADDIE model is an instructional design model that includes Analysis, Design, Development, Implementation and Evaluation (Aldoobie, 2015; Azimi et al., 2015; Botturi, 2003). Therefore, the stages when the AwARDIE model is used includes the stages of Awareness of Problem, Analysis, Redesign, Development, Implementation and Evaluation. The process of modification from ADDIE into AwARDIE can be seen in Figure 1.

1. Awareness of Problem: This stage is carried out to find the problems, the cause of problems and the solution to problems. This stage is carried out through preliminary research.

2. Analysis: In this stage, the condition of the existing textbooks and the required integrative thematic textbooks are analysed.

3. Redesign: The redesign stage is the stage of designing an existing integrative thematic textbook. In addition, the specifications and prototypes of integrative thematic textbooks are also designed in this stage.

4. Development: The development stage is the stage to develop an integrative thematic textbook. The researchers compile an integrative thematic textbook prototype, expert assessment, practitioner assessment, Focus Group Discussion (FGD) with practitioners, and conduct a try-out for the integrative thematic textbook prototypes.

5. Implementation: The implementation stage is the stage for implementing the integrated thematic textbook that has been developed into the learning process. It is carried out through experimental research.

6. Evaluation: The evaluation stage is the stage for evaluating the implementation of the innovative product at each stage.
The research respondents consisted of experts, teachers and students. Six experts (three professors and three associate professors) became the respondents who will rate the integrative thematic textbooks. In addition, eight teachers became the respondents in the preliminary research. To rate the thematic textbooks as integrative, eight teachers were also invited as respondents. The same number of teacher respondents were also involved in the FGD. Respondents at the trial stage were the teachers and the first graders of MI Mangunsari in Salatiga. There were one teacher and three students involved in the first trial. Then, in the second trial, more students (10) and one teacher became the respondents. For the third trial, 30 students (the whole member of the class) and one teacher have become the respondents. At the end of the trial, an implementation on the product was given to the teachers and the first graders of MI Kumpulrejo in Salatiga which consisted of one control group (1 teacher and 29 students) and one experimental group (1 teacher and 30 students).

Data was collected through interviews, document analysis, observation, questionnaires, FGD and tests. To collect the learning problems and the problem solving, an interview to teachers was conducted.

The qualitative data was analysed through the stages of organising the data, analysing the data and concluding the data. The quantitative data was analysed using the Levene, Kolmogorov-Smirnov, t-test and Omega squared formulae. The formulae were used to analyse the pre-requisite test and analyse the effectiveness of integrative thematic textbooks.
on improving student learning outcomes. The significance level for the calculation results of the Levene, Kolmogorov-Smirnov formula and the $t$-test was determined to be 5%.

RESULTS AND DISCUSSION

The Development of Integrative Thematic Book

Stage 1: Awareness of problem

To start the process of developing an integrative thematic book, preliminary research was conducted. During this stage, the researchers identified the problems, causes of the problems and solutions to the problems. The findings show that the critical problem faced by students at school is the use of several separate textbooks which had confused the understanding of the first graders of MI in Salatiga. The teachers argued that the use of separate textbooks was not in accordance with the characteristics of MI students, namely their integrative way of thinking. The teachers assumed that this problem can be resolved by integrating all the subjects (Thematic, Fiqh, Al-Qur’an Hadith, Aqidah Akhlak and Arabic) into a single textbook during the learning process.

Stage 2: Analysis

Based on the preliminary research, the researchers analysed the problem further by looking at all the textbooks used by students and the potential textbooks required by students. There are five textbooks used with five different themes, according to the subjects given, namely Thematic textbooks, Fiqh textbooks, Al-Qur’an Hadiths textbooks, Aqidah Akhlak textbooks and Arabic textbooks. Based on the interview with the teachers, these are the problems occured when using separate textbooks:

1. The material in one textbook is not synchronous with the material in other textbooks.
2. The material in the Arabic textbook is too difficult for the determined students.
3. Some materials in the Fiqh textbooks are not suitable for students’ psychological development.

To solve these problems, an integrative textbook consisting of those five subjects is needed.

Stage 3: Redesign

In this stage, the researchers redesigned the product prototype based on the product specifications needed by both students and teachers. To redesign, a questionnaire were
given to eight teachers to determine the textbook components (e.g., material, presentation, language) needed for the interactive textbook.

The material specifications required in an integrative thematic textbook should meet the competency standard determined by the Indonesian government, including the latest information development. It is also important to consider gender balance in such an integrative book. The specifications for the presentation of this book that are needed include books presented per sub-theme so that they are not thick, textbook systematics, with lots of pictures and song text, the writing is presented in large fonts, and the size of the book is A4. The integrative textbook should be written in simple sentences, in lowercase letters, word recognition through pictures, and in everyday words that are familiar to students.

**Stage 4: Development**

The researchers developed the integrative textbook through several steps. First, the book draft was prepared as a prototype, and then, the prototype will be assessed by media experts. Then, another assessment was completed by practitioners, and later, an FGD was held with practitioners. Finally, the textbooks were tried out to the users—students.

**Development of prototype 1: The first draft of integrative thematic textbook**

In this stage, a draft of the Integrative Thematic Textbooks was developed into prototype 1. The theme of the prototype 1 is “Diriku” and the sub-theme is “Aku Anak Soleh”. In this prototype, an A4 paper size was used with the total 43 pages, the Latin letters were written using 16 pt Verdana letters, while the Arabic letters were written using 24 pt Traditional Arabic letters. The typeface in the prototype 1 used lowercase. In each page of the prototype 1, the sub-themes were written at the top, while at the bottom, the student books and page numbers were written. Each learning activity in the content section contained the title of the learning activity, a description of the material, instructions for activities carried out by students, a summary of the material and assignments carried out at home.

**Experts assessment on the prototypes**

Prototype 1: The first draft of integrative thematic textbook had been assessed by six experts (three professors and three associate professors). The expert’s assessment was carried out through a questionnaire and the experts were given the opportunity to provide suggestions to improve the prototype. The experts assessed the prototype using Aiken’s formula which resulted in $v = 0.84$ (the experts have rated prototype 1 had high validity).
Figure 2. Revision from prototype 1 to prototype 2
To improve prototype 1, the experts provided some notes that there was a mistyped, suggested adding questions and commands at the beginning of the material, and adding captions to images that were not yet annotated. Based on those notes and suggestions, prototype 1 had been revised into prototype 2; which is the second draft. The result can be seen in Figure 2.

**Practitioners’ assessment on the prototypes**

Prototype 2: The second draft was assessed by eight teachers as practitioners. The assessment components used by the teacher were the same as those used by experts. After being analysed using Aiken's formula, the practitioner’s assessment results obtained $v = 0.83$ (the practitioners stated that prototype 2 had high validity).

For the improvement of prototype 2, practitioners suggested that page 19 has to be given a page number. The results of the revision of prototype 2 became the prototype 3, which is the third draft. The revised part can be seen in Figure 3.

**Focus Group Discussion (FGD)**

FGD was conducted with eight teachers, to get comments and suggestions on prototype 3. The teachers’ comments on prototype 3 are: the material is in accordance with the curriculum, the presentation of the content by reproducing the pictures is age-appropriate for students, the size and the use of large fonts are also suitable for the students’ age.

To improve prototype 3, the teachers suggested an improvement by adding a list of basic competencies, and being consistent in using the letter a. Based on the suggestions from the teachers, prototype 3 was revised into prototype 4 (The fourth integrative thematic textbook). The results can be seen in Figure 4.
Prototype trial

The draft was carried out in three stages. First trial: One-to-one, second trial: Small group and third trial: Field test (Kurbaita et al., 2013).

First trial: One-to-one is the trial activity to prototype 4 in the learning process. This implementation was carried out by three students and one teacher at MI Mangunsari, Salatiga. The pre-test average score was known to be 72, while the post-test average score was 88 (the first trial of the post-test average value increased by 16, when compared to the average value in pre-test). The result can be seen in Figure 5.
Second trial: Small group was a trial activity for prototype 5 in the learning process. The second trial was carried out at MI Mangunsari Salatiga with 10 students and 1 teacher who were different from the first trial. Pre-test average score was 71, while the post-test average score was 88 (the average post-test score increased by 17 points, when compared to the pre-test average value). The results are shown in Figure 6.
Third trial: Field test is a trial for the prototype 6 in the learning process. This trial was carried out by involving 30 students (1 class) and 1 teacher from different class. Before analysing the improvement in student learning outcomes in the third trial, assumptions had been tested which include homogeneity and normality tests. The results can be seen in Table 1.

The increase in the pre-test against the post-test was analysed using the dependent sample of $t$-test formula and the two dependent samples of Omega squared formula. The result of the dependent sample $t$-test formula are $t = -21.171$ with Sig. (2-tailed) $0.000 < 0.005$ (the pre-test score with the post-test score has a significant difference). Based on the analysis of the Omega squared formula for the two dependent samples, the result is $\omega^2 = 0.8817$ (the use of the prototype 6 has increased the post-test score by 88.17% when compared to the pre-test value).
Table 1. Result of the homogeneity and normality tests in third trial

<table>
<thead>
<tr>
<th>Test</th>
<th>Statistic formula</th>
<th>Sig-level</th>
<th>Sig-value</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homogeneity test</td>
<td>Levene</td>
<td>5%</td>
<td>0.954 &gt; 0.05</td>
<td>The pre-test value is homogeneous with the post-test value</td>
</tr>
<tr>
<td>Normality test</td>
<td></td>
<td>5%</td>
<td>Pre-test: 0.081 &gt; 0.05, Post-test: 0.089 &gt; 0.05</td>
<td>The distribution of the pre-test and post-test values was normally distributed</td>
</tr>
</tbody>
</table>

To improve the prototype 6, it is recommended that the command sentence on page 1 is added with a punctuation mark (!). Based on this suggestion, prototype 6 was revised into prototype 7. The revision of the prototype 6 can be seen in Figure 7.

After going through a series of improvements, prototype 7 is the final version of the integrative thematic textbook. Thus, the integrative thematic textbook is ready to be implemented in the learning process.

![Figure 7. Revision from prototype 6 to prototype 7](image)

Stage 5: Implementation

The implementation stage is the stage for implementing the integrated thematic textbook into the learning process. The research subjects consisted of two classes: one class with 29 students as the control group and one class with 30 students as the experimental group. In the control group, the existing textbooks were used during the learning process, while in
the experimental group, the integrated thematic textbooks were used. The results can be seen in Table 2.

After all the prerequisite tests are met, then different test was done using the independent samples $t$-test with a significance level of 5%. Based on the results, the significance (Sig) was $0.001 < 0.05$ (the post-test scores in the experimental group had a significant difference to the post-test scores in the control group). The $t$-test result showed a positive value, meaning that the post-test average score in the experimental group was higher than the post-test average score in the control group. The results can be seen in Table 3.

**Table 2.** Result of the homogeneity and normality tests in the implementation stage

<table>
<thead>
<tr>
<th>Test</th>
<th>Statistic formula</th>
<th>Sig-level</th>
<th>Sig-value</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homogeneity test</td>
<td>Levene</td>
<td>5%</td>
<td>0.155 &gt; 0.05</td>
<td>The post-test scores in the experimental group and the post-test scores in the control group had homogeneous variance.</td>
</tr>
<tr>
<td>Normality test</td>
<td>Kolmogorov-Smirnov</td>
<td>5%</td>
<td>Post-test in exp group: 0.089 &gt; 0.05</td>
<td>Post-test in control group: 0.200 &gt; 0.05</td>
</tr>
</tbody>
</table>

**Table 3.** Comparison of the average post-test scores of the experimental group and the control group

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Mean Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiment</td>
<td>30</td>
<td>79.4000</td>
<td>8.84191</td>
<td>1.61430</td>
</tr>
<tr>
<td>Control</td>
<td>29</td>
<td>70.2069</td>
<td>11.04335</td>
<td>2.05070</td>
</tr>
</tbody>
</table>
To determine the effectiveness of the use of thematic integrative textbooks, the post-test scores in the experimental group and the post-test scores in the control group were analysed using the Omega squared formula of two independent samples and the result obtained is $\omega^2 = 0.1632$. Therefore, it can be concluded that the use of integrated thematic textbooks that have been developed can increase student learning outcomes by 16.32% when compared to the use of existing textbooks. In other words, the use of the developed integrated thematic textbook is more effective for improving student learning outcomes when compared to the use of existing textbooks.

**Stage 6: Evaluation**

The evaluation stage is to evaluate the implementation at each stage. The results of the evaluation at each stage are used to improve the next stage.

The development of the integrative thematic textbook that integrates the five subjects is considered to fit to the MI students' thinking characteristics as discussed previously (Rahayu & Hidayah, 2014). This development supports the implementation of learning in MI which uses an integrated thematic learning approach. This is also considered as a breakthrough in MI learning which should still in the stage of thinking concretely and holistically (Prastowo, 2014; Barus & Djukri, 2013). The thematic learning approach provides many opportunities for students to participate more and be more involved in their learning activities (Abduh, 2014).

**The Impact of Integrative Thematic Textbooks on Elementary School Student Learning**

The product of this development is the integrative thematic learning textbooks for elementary school student which has been proven to be effective to improve the learning outcomes of the first graders in MI Kota Salatiga. This has strengthened several opinions that textbooks have a role in the process and student learning outcomes. Badea and Iridon (2015, p. 303) state that the learning materials used can provide real assistance in teaching. Franzolin and Bizzo (2015, p. 224) states that textbooks are one of the main determining factors for obtaining knowledge taught in schools. Atay and Danju (2012, p. 65) feels that textbooks will influence students in participating in learning activities. Mahmood et al. (2009: 2) states that textbooks have a huge influence on what is taught. Harsono (2007, p. 171) states that textbooks as teaching material have a real effect on increasing interest and attracting students' attention. The developed integrated thematic textbook had been proven to be effective in increasing student learning outcomes by 16.32%. The average score of students using the integrated thematic textbook was higher than the average score of students using existing textbooks. These results proved that the developed integrative thematic textbooks are effective for improving student learning outcomes.
The results of the above research proved the opinion that textbooks affect student learning outcomes. The textbooks are used to optimise learning activities, so that student learning outcomes can be optimal (Sinaga et al., 2017). It is also reported that the quality of textbooks used as learning sources determines the achievement of learning objectives (Asri, 2017). Kurbaita et al. (2013) said that thematic learning textbooks can improve student learning outcomes. In addition, textbooks are the main source of education as an efficient tool to achieve learning outcomes (Aslan, 2010).

CONCLUSION

The development of integrative thematic textbook has been declared valid by experts as well as by practitioners. The impact of the development of integrative thematic learning textbooks for elementary school student learning has been proven to improve student learning outcomes by 16.32%. Therefore, the teachers can use the integrated thematic textbook that has been developed to improve the learning outcomes of the first graders of MI.

REFERENCES


