The Development of Indonesian Language Textbook Based on Multiple Intelligences Theory for Industrial Chemistry Department Students in SMK Negeri 1 Cerme

Ilmatus Sa’diyah, Universitas Indonesia, Indonesia

The Asian Conference on Education 2017
Official Conference Proceedings

Abstract
Intelligence is included in aspects of individual differences. Gardner divided intelligence of human became eight categories, called multiple intelligences. Understanding of multiple intelligences can help students to recognize their prominent intelligence and develop their potential optimally. The purposes of research are to describe the development process, quality, and the effectiveness of Indonesian textbook based on the theory of multiple intelligences for Students of Industrial Chemistry Department in SMK Negeri 1 Cerme. This research was conducted with Thiagarajan development model (definition, design, and development). Development process of the textbook encountered many problems, such as changing the validator. This problem impacts to the time efficiency during development. Based on the evaluation from the expert validator, teacher validator, and friend validator, the textbook has "good quality" with percentage 89,9% on the advisability aspect (eligibility, presentation, language, and graphic). Meanwhile, the effectiveness of Indonesian language textbook for Industrial Chemistry Department Students in SMK Negeri 1 Cerme is basically effective with percentage 77,5%. This result was concluded based on observation of teacher and students activity. After using Indonesian language textbook, students show a good result with completeness 90,4% in limited trials and 86,9% in extensive trials. Even, the students give a positive response to the textbook. The positive responses are evident from the assessment of textbook effectiveness in terms of content, presentation, language, and graphic. Students judge that the textbook is qualified "Highly Effective" with a percentage of 91.1%. Positive responses are also evident from the comments and suggestions of students who generally like the textbook.

Keywords: language textbook, language material, multiple intelligences, development process, quality, effectiveness.
1. Introduction

In 1904, French psychologists discovered the first intelligence test that could measure objectively an individual's intelligence invented which could be expressed in terms of numbers or IQ (Intelligent Quotient) scores. However, Gardner (Armstrong, 2004, p.1-2) considered that the intelligence test have a low validity value because the assessment of intelligence tests is conducted outside the natural learning environment so that it could not be used as a differentiator of human potential. In fact, Denig (2004) mentions, IQ tests could not measure the ability of an athlete or pianist. For that, Gardner (Chatib, 2010, p.102) divides human intelligence into eight categories, namely linguistic, mathematical-logical, visual-spatial, musical, kinaesthetic, interpersonal, intrapersonal, and naturalist intelligence. The concept of multiple intelligences focused on the uniqueness in finding the talent of every child.

The intelligence of each student that can be found by the teacher can be used as a material to make learning more interesting. For example, choosing the reading material for students. In this case, reading materials can be student books or textbooks that can stimulate students' multiple intelligences.

Yulianto (2013) expresses that Indonesian Language Textbooks that was published by the Language Agency presented in a seemingly mechanistic order so it makes learning less effective. In addition to quality, Indonesian textbooks also do not reflect conformity with the type of intelligence that students have when textbooks can be a stimulus of the intelligence formation (Armstrong, 2009, p29). The point is that the target students are considered homogeneous so that the existing teaching materials in the textbook were presented without looking at the type of student intelligence. Students with musical intelligence tend to be indifferent and bored of receiving textbooks presented with the teaching material that is dominant to the type of intelligence of his friend, it is natural intelligence.

Indonesian subject is categorized as linguistic intelligence. This has an impact on the determination of a larger portion in writing the textbook. Adjustment demands to each type of student intelligence is not intended to feature the intelligence of naturalist students or music students, but to feature the usage of students’ intelligence to stimulate students' motivation in learning so that students increase their curiosity. However, this adjustment can also help students recognize their intelligence and improve their intelligences.

Based on the description, above the researcher developed an Indonesian textbook based on Gardner's multiple intelligence theory based on the 2013 curriculum. This research aims to produce a description of the development process, quality (content quality, presentation, design, and language), and effectiveness of Indonesian textbook based on the theory of multiple intelligences in the whole semester of the X class of Industrial Chemistry Department of SMK Negeri 1 Cerme Gresik. Specially, the existence of this textbook is also expected to give a thought contribution to the world of education in order to be more creative in maximizing the learning by using teaching materials in the form of a textbook which is fun for students.
2. Literature Review

2.1 Textbooks

Textbooks in schools are often labelled as student books. Textbooks become guidebook both in the process of study in the classroom and in the process of self-study which contains subject matter derived from the basic competencies in the curriculum (Trianto, 2007, p74; Prastowo, 2013, p168). Therefore, textbooks whose a main function as a reference in the learning process were written by Indonesian teachers so that it is contextual with the condition of students and classroom. Adjustment of textbooks to the needs of students can improve the ideal quality of a textbook (Richards, 2001, p256).

Textbooks have several roles in learning. The roles (State Cunningsworth in Tsiplakides, 2014) are described as follows:

a) a resource for presentation material (spoken / written)
b) a source of activities for learner practice and communicative interaction.
c) a reference source
d) a syllabus
e) a resource for self-directed learning or self-access work.
f) a support for less experienced teachers.

Prior to used in learning, textbooks need to be evaluated. There are several criteria in evaluating textbooks. Cunningsworth (in Tsiplakides, 2014) proposed the following criteria for the evaluation of course books:

a) Coursebooks should be corresponding to learner’s needs. They should match the aims and objectives of the language-learning program.
b) Coursebooks should reflect the uses (present or future) learners will make of the language. Textbooks should be chosen that will help students use language for their own purposes.
c) Coursebooks should take account of students' needs, without dogmatically imposing a "rigid" method.
d) Coursebooks should have a clear role as a support for learning.

In addition, the National Standardization Agency of Indonesia also set some criteria for the textbooks assessment. These criteria include the content feasibility (material conformity with KI and KD, material accuracy, and supporting learning materials), language (conformity with level of students’ development, communicative, ambiguity and unity of ideas, and the appropriateness of the use of the Indonesian Spelling General Guidelines), presentation (presentation of learning, and completeness of presentation), and design (book size, book cover design, and book content design) (BSNP, 2007).
2.2 Theory of Multiple Intelligences

In this case, Armstrong (2004, p20) stated that the theory of multiple intelligences was a cognitive model that seeks to explain how a person used his intelligences to solve problems and created products. In contrast to Armstrong, Jasmine (2012, p11) stated that multiple intelligences is an appreciation of individual differences. These differences become the basis of students in determining the main learning style in learning new things. As a result, each student has a different learning style (Denig, 2004). This multiple intelligence also has another name, namely SLIM-n-BIL on the proposal of De Porter, et al (2010, pp138-139). The following table shows the description of each intelligence (Amstrong, 2009, pp6-7; De Porter, 2010, pp138-139).

<table>
<thead>
<tr>
<th>Table 1. Multiple Intelligences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spatial-Visual</td>
</tr>
<tr>
<td>Verbal-Linguistics</td>
</tr>
<tr>
<td>Interpersonal</td>
</tr>
<tr>
<td>Musical-Rhythmic</td>
</tr>
<tr>
<td>Naturalist</td>
</tr>
<tr>
<td>Body-Kinesthetic</td>
</tr>
<tr>
<td>Intrapersonal</td>
</tr>
<tr>
<td>Logical-Mathematical</td>
</tr>
</tbody>
</table>

Gardner (Armstrong, 2004: 19) explained that the model of multiple intelligences he made was a temporary formulation. Gardner's statement is evidenced by the discovery of the ninth intelligence, namely the existential intelligence. Gardner & Hatch (1989) defined existential intelligence as the ability to solve life problems and social situations. The intelligence is complementary to eight intelligences before. However, existential intelligence is not used in this study because it is related to the problem constraints.
This multiple intelligence is the basis for the development of textbooks. Phillips (2010) states various student-centered textbooks through the use of multiple intelligence theory can improve learning outcomes. Good results can occur due to the fulfillment of textbook content to student needs and learning objectives (Sheldon, 1988).

2.3 Effectiveness

Effectiveness comes from the word effective. In the world of education, the term effectiveness is commonly used to state the final state of a thing. The conditions include the best or worst final conditions in the implementation of activities.

The effectiveness of Indonesian textbooks based on the theory of multiple intelligences is reviewed in terms of responses and interests of students in learning. In Big Indonesian Dictionary (2008, p1170), response is a reaction. Associated with the previous thing, the response is defined as a reaction of students to learning activities using Indonesian textbooks based on the theory of multiple intelligences. Students’ responses include responses to content quality, presentation, language, and design. The students’ responses indirectly leave an impression after using the product.

Meanwhile, student interest is the indicator of the need that motivates the act of learning and determines the success of student learning (Hamalik, 2007, p122). Effective textbooks to be applied can be seen from high student interests during learning.

3. Methodology

The research was carried out with the method of research and development because it was oriented to produce and test the effectiveness and quality of products in the form of textbooks (Sukmadinata, 2010, p164). The development model used was 4-D (define, design, develop, and disseminate) because it could run synergistically with the purpose of developing research that was to develop textbook of Indonesian language based on multiple intelligence (Thiagarajan, 2007, p66). However, this research was only conducted until the development stage because disseminate aspect will be conducted in the second phase of research. Here is a chart of the research design which was undertaken.
First, the defining phase, the steps taken were front-end analysis (using the 2013 curriculum and the theory of multiple intelligences), student analysis (age, academic ability, intelligence type, and learning motivation), task analysis (detailing the content of teaching materials in the outline form), conceptual analysis (making KD concept map adapted to KI-KD of Indonesian subjects for SMK Class X Semester 2), and analysis of learning objectives (converting task analysis and concept analysis into specific, more operational learning objectives).
Second, the design stage included two steps, they were the selection of textbook format / preparation of the text and the initial design of textbooks. The textbook development format followed the developed book format. The writing of textbook was followed by initial design as the main activity.

Third, the development stage was conducted to produce an Indonesian textbook of class X semester based on the theory of multiple intelligences in curriculum 2013. In this stage, the researcher conducted the validation, textbook testing, and revision. Textbook validation includes the content feasibility, presentation, language and design conducted by lecturers, teachers of Indonesian subjects in SMK Negeri 1 Cerme, and peers. Meanwhile, limited trials with a total of 8 students were conducted simultaneously with validation by experts, while extensive trials with 32 students were conducted after revisions of the limited trial and expert validation results.

This development research was conducted in SMK Negeri 1 Cerme with the subject of X class study of Chemical Industry Department semester 2. The number of students of class X KI-2 SMK Negeri 1 Cerme is 32 students, 14 girls and 28 boys.

Data collection techniques that were used in this study were differentiated based on the problem to be studied. Therefore, there are several collection techniques used. The techniques were documentation, questionnaires, observations, and tests. The questionnaires were divided into three, namely MI specific questionnaires that were adapted in Amstrong (2009, pp35-38), textbook quality questionnaires, and student response questionnaires. Questionnaires of textbook quality are still differentiated based on validators who rate textbooks, ie. questionnaires for lecturers, questionnaires for Indonesian language teachers, and questionnaires for peers. Observations were made while conducting extensive trials. The test used in this study was divided into two, namely performance tests and formative tests. Performance tests were conducted during the learning activities so that students did not feel that they were doing tests. Meanwhile, formative tests were performed when the student had held a learning activity at the end of basic competence.

The development process was analysed by qualitative descriptive method. Existing documents were used to reinforce the description of the development process. Data validation results from lecturers, Indonesian teachers, peers, student questionnaires, and observation sheet recapitulated, analysed in quantitative descriptive, then analysed by using the formula.

\[
A = \frac{\text{Total score}}{\text{Maximum score}} \times 100 \%
\]

\[
A = \text{Assessment}
\]

The result of the calculation was adjusted to the qualification of the assessment in the table.
Table 2. Assessment Qualification

<table>
<thead>
<tr>
<th>Achievement Level</th>
<th>Qualification of Quality</th>
<th>Qualification of Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>81–100 %</td>
<td>Very feasible</td>
<td>Highly Effective</td>
</tr>
<tr>
<td>61–80 %</td>
<td>Feasible</td>
<td>Effective</td>
</tr>
<tr>
<td>41–60 %</td>
<td>Feasible enough</td>
<td>Effective enough</td>
</tr>
<tr>
<td>21–40 %</td>
<td>Less feasible</td>
<td>Less effective</td>
</tr>
<tr>
<td>0–20 %</td>
<td>Very less feasible</td>
<td>Ineffective</td>
</tr>
</tbody>
</table>

Student learning outcomes were obtained from the students’ test scores consisting of performance tests and a description test on a formative test. The results of this student learning were analysed in quantitative description with mean and standard deviation formula. Furthermore, the average student scores and student grades as individuals were adjusted to the criteria or benchmarks in the achievement of graduation (Nurgiyantroro, 2011, p219).

Table 3. Criteria of Student Achievement

<table>
<thead>
<tr>
<th>Percentage Interval Level</th>
<th>Value of Ten Scale</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>96–100</td>
<td>10</td>
<td>Perfect</td>
</tr>
<tr>
<td>86-94</td>
<td>9</td>
<td>Very Good</td>
</tr>
<tr>
<td>76-85</td>
<td>8</td>
<td>Good</td>
</tr>
<tr>
<td>66-75</td>
<td>7</td>
<td>Enough</td>
</tr>
<tr>
<td>56-65</td>
<td>6</td>
<td>Average</td>
</tr>
<tr>
<td>46-55</td>
<td>5</td>
<td>Almost Medium</td>
</tr>
<tr>
<td>36-45</td>
<td>4</td>
<td>Less</td>
</tr>
<tr>
<td>26-35</td>
<td>3</td>
<td>Very Less</td>
</tr>
<tr>
<td>16-25</td>
<td>2</td>
<td>Poor</td>
</tr>
<tr>
<td>1-15</td>
<td>1</td>
<td>Very Poor</td>
</tr>
</tbody>
</table>

4. Result and Discussion

4.1 Development Process

The students of class X KI-2 SMK Negeri 1 Cerme had active characteristics. They possess good affection ability with the evidence of all tasks and activities provided in a timely and responsible manner. The students of class X KI-2 SMK Negeri 1 Cerme mostly came from Gresik regency. Their average age is 16 years. The age of 16 years included is categorized in adolescents. Teen age is characterized by active motion and high curiosity.

In addition, students were also based on the intelligence they have. It was done to generate conclusions about the dominant intelligence in each student and the tendency of intelligence in the classroom. The conclusion also facilitates the application of multiple students’ intelligence in developed textbooks.
Students have diverse intelligences. However, some students also have the same intelligence as other friends in one class. The dominating intelligence of each student varies and many factors influence it. Students show the dominance of logical mathematical intelligence, interpersonal intelligence, and intrapersonal intelligence. Furthermore, the intelligence explored in the development of textbooks based on the theory of multiple intelligences, namely logical-mathematical intelligence, interpersonal intelligence, and intrapersonal intelligence. The textbook material developed for the second semester X class was the material related to anecdotal text and negotiation text.

The selected format was materially adapted to the national standard textbook set by BSNP. Books were made in 21 cm x 29.7 cm. What distinguishes it from other textbooks is the fun element that exists in textbooks based on the theory of multiple intelligences.
Meanwhile, the theory of multiple intelligences as the basis of textbook development was applied in textbooks in two ways, as a whole component and as a composite component with the whole component (sub-material textbook). The first stage was used for intelligence that cannot be applied to the textbooks’ core components. The second stage was used for intelligence that can be melted into the core components of textbooks. The following is the application of multiple intelligences in textbook components.

Table 5. Application of Multiple Intelligences in Textbooks

<table>
<thead>
<tr>
<th>Aspect of Intelligence</th>
<th>Textbook Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language intelligence</td>
<td>The materials about anecdote text and negotiations Column: Is this sentence effective?</td>
</tr>
<tr>
<td></td>
<td>Logical-mathematical intelligence</td>
</tr>
<tr>
<td></td>
<td>Column: Is this sentence effective? Quiz column</td>
</tr>
<tr>
<td>Spatial-visual intelligence</td>
<td>Textbook color Picture illustration in textbook Mind map</td>
</tr>
<tr>
<td>Kinesthetic intelligence</td>
<td>Drama Activity of opera class. Stand up comedy</td>
</tr>
<tr>
<td>Musical intelligence</td>
<td>Anecdote text is in the form of song lyrics Music during learning in music cassettes</td>
</tr>
<tr>
<td>Naturalist Intelligence</td>
<td>Apple questions Activities at the school park</td>
</tr>
<tr>
<td>Intrapersonal intelligence</td>
<td>Reflection Apple questions</td>
</tr>
<tr>
<td>Interpersonal intelligence</td>
<td>Training in groups</td>
</tr>
</tbody>
</table>

There are two themes that are used according to the number of chapters in the textbook, namely "Explore the World of Chemical Industry" in chapter one and "Become a Doer of Industry" in chapter two.
Based on the validation and testing of the textbook "Cerdas melalui Bahasa Indonesia", there are some improvements of the textbook. These improvements are in the aspect of content, presentation, language, and design.

a) Changing the short text
b) Simplifying how to use the book
c) Sorting the material in the mind map
d) Changing the exercises in textbooks
e) Fixing the command in the instruction of the exercises
f) Fixing the command line in the column 'I am Intelligent' and 'My Own Characters'
g) Replacing biographies of foreign figures in chapter two
h) Replacing the cover of every chapter
i) Changing the picture of alpha zone in chapter two
j) Fixing the use of spelling
k) Changing the front cover design of a textbook
l) Simplifying the content design appearance of textbook

4.2 The Quality of Textbook

Textbooks were judged on four aspects, namely eligibility, namely content, language, presentation, and design. Appraisers came from three different validator levels (expert validator, Indonesian language teacher, and student). The results of the judgment varied. The assessment is shown in the following table.
### Table 6. The Assessment of Quality Textbook

<table>
<thead>
<tr>
<th>No</th>
<th>The Kind of Quality</th>
<th>MS</th>
<th>Expert</th>
<th>Teacher</th>
<th>Friend (College Student)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>TS</td>
<td>QS</td>
<td>CR</td>
<td>TS</td>
</tr>
<tr>
<td>1</td>
<td>Content</td>
<td>72</td>
<td>62</td>
<td>86.1%</td>
<td>VF</td>
</tr>
<tr>
<td>2</td>
<td>Language</td>
<td>60</td>
<td>55.5</td>
<td>92.5%</td>
<td>VF</td>
</tr>
<tr>
<td>3</td>
<td>Presentation</td>
<td>44</td>
<td>41</td>
<td>93.2%</td>
<td>VF</td>
</tr>
<tr>
<td>4</td>
<td>Design</td>
<td>148</td>
<td>126.5</td>
<td>85.5%</td>
<td>VF</td>
</tr>
</tbody>
</table>

Note:
- **MS**: Maximum Score
- **TS**: Total Score
- **QS**: Quality Score
- **C**: Criterion
- **VF**: Very Feasible
- **F**: Feasible

In general, textbook of "Cerdas melalui Bahasa Indonesia" is very eligible to be developed and applied further in Indonesian language learning. On all aspects of eligibility, all scores were above 90%. The achievement of the score was not only from expert validators, but also from Indonesian language teachers, and students as research associates. The highest feasibility aspect was the aspect of presentation that was assessed by the student while the lowest aspect on the content aspect was assessed by the Indonesian teacher. The lowest value was qualified viable. Indonesian teachers considered that textbooks still need to be added the materials that support learning effectively even though there are elements of multiple intelligences. Teachers advised that the essence of textbooks is a material that adds insight into the linguistic language of the students. Expert validators also asked to combine between the subject matter and multiple intelligences to be the characteristic of the textbook "Cerdas melalui Bahasa Indonesia". It was also done in the revision phase.
The quality of textbook "Cerdas melalui Bahasa Indonesia " is the best on the presentation aspect. Meanwhile, the lowest is the content aspect. That part became a consideration in making the final stages. Nevertheless, this textbook has been well-rated and very feasible for use by validators. Therefore, this textbook is ready to be tested widely to students of SMK Negeri 1 Cerme.

4.3 The Effectiveness of Textbook

Trials were conducted twice, ie, limited trials and extensive trials. The material used was anecdote text because the students of class X KI 2 were still studying it when data collection was collected. Basic Competence (KD) that was tested was KD 1 (Understanding the structure and rules of anecdote text both oral and written) and KD 2 (Comparing anecdotal text either oral or written). From both trials, the data were generated in the form of student scores as follows.

Table 7. The Score of Students

<table>
<thead>
<tr>
<th>No</th>
<th>The Phase of Trials</th>
<th>TA KD 1</th>
<th>TA KD 2</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Limited Trial</td>
<td>92,1</td>
<td>85</td>
<td>90,4</td>
</tr>
<tr>
<td>2</td>
<td>Extensive Trial</td>
<td>96,2</td>
<td>82,4</td>
<td>86,9</td>
</tr>
</tbody>
</table>

Based on the contents in the table, the student score at the end of the learning was very good. It shows that the textbook "Cerdas melalui Bahasa Indonesia" is effectively used in learning. However, the average grade end-grade had decreased from the limited trial to the broad trial. The decrease was triggered in the lesson of KD 2, the students did not understand the procedure of comparing anecdote text with other texts. However, the decline is still within the limits of effective standards.

Beside using the test, the effectiveness of textbook use in learning was also assessed from observation. The observations were conducted by the Indonesian teachers at SMK Negeri 1 Cerme. From that observation, an assessment was obtained 77.5%.
The assessment was categorized as effective. The overall points in the observation sheet got a good rating (lowest score) and excellent (highest score). The results of the assessment on the observation sheet support the students' learning outcomes that show less significant improvement in the outcomes.

Furthermore, students also gave respond using questionnaire. The students’ response measures the level of the effectiveness aspects of content, presentation, language, design, and level of student success after using Indonesian textbook based on the theory of multiple intelligences.

![Chart 3. Student Response](image)

In general, the average of student response to textbooks was excellent. However, there is one that has not been balanced with other aspects, namely aspects of graft. This section concerns to researchers in improving textbooks into final textbooks.

In the questionnaire, students also provide written responses in the form of criticism and suggestions. Overall, responses consist of both positive and negative responses. In the content aspect, students consider the reading that was presented was interesting so they are motivates and likes to read them (effective), but they also assume the text of the story was less interesting (less effective). In the presentation aspect, students consider the presentation of the contents in this book is interesting and organized (effective). In the language aspect, students assume there are still some sentences that are difficult to understand because it uses a figure that is not familiar (less effective). In the aspect of design, students consider the cover of the book is less interesting (less effective) and some others like the colour of his cover (effective).

The average of student response about the language aspects and textbook graffiti indicates less effective qualifications. This is due to the result of Indonesian textbook product development based on the theory of multiple intelligences which has been tested in the form of draft II and given to the students in the minimal form and not the whole text book.
Meanwhile, on the delivery aspect, students consider learning is less entertaining or use existing media (less effective). However, students also assessed Indonesian textbooks based on the theory of multiple intelligences educate students to be better and improve the spirit of reading because there is a biography of figures.

5. Conclusion

Based on the results of research and discussion, it can be concluded that the textbook of Bahasa Indonesia for SMK class X Department of Industrial Chemistry based on the theory of multiple intelligences with the title "Cerdas Melalui Bahasa Indonesia " has been developed and very feasible to use in learning broadly.

The process of developing textbooks "Cerdas Melalui Bahasa Indonesia " has been developed based on the Thiagarajan 3P development theory, which is defining, designing and developing. Each stage has been well implemented so it produces a final text book that is very feasible to be applied in learning. In the defining phase of the analysis activities to design textbooks, the analysis of the front end, student analysis, task analysis, concept analysis, and analysis of learning objectives. The entire analysis activity refers to the 2013 curriculum and Gardner's multiple intelligence theory. At the design stage, the activities of formulating textbooks and the initial textbooks were prepared. Meanwhile, at the development stage, activities of validation, testing, and revision were carried out. That stage is the last stage that determines the quality of the final textbook.

Book quality shows a good percentage. The eligibility of the content is categorized as "Very Eligible" with 87% percentage, the feasibility of categorizing "Very Eligible" with the percentage of 93.2%, the eligibility of categorized "Very Eligible" with percentage 91.4%, and the feasibility of categorizing "Very Eligible" 88%.

The effectiveness of textbooks " Cerdas Melalui Bahasa Indonesia " is based on observations of teacher teaching activities and students' learning activities from the beginning to the end of the learning and 91.1% students' assessment with the category of "very effective".

The textbook " Cerdas Melalui Bahasa Indonesia " which has been developed is expected to serve as a reminder for teachers to provide an active portion of developing students' intelligence as a provision to recognize themselves. It also helps to improve students' motivation in learning Indonesian language.

Other researchers who conduct textbook development research need to take note the validator qualification standards that are clear and truly experts in the field of textbook writing. It is also expected to follow up the development of textbooks of Indonesian for SMK class X Department of Industrial Chemistry based on the theory of multiple intelligences from other researchers by providing better motivation or new creativity because of the existence of textbooks of SMK in accordance with each department, especially the Department of Chemistry Industry that is still rare. Textbooks should also be tailored to the needs of students relating to the multiple intelligences and the basic competencies that exist because each level of education or majors has different needs that cannot be equated.
Acknowledgement

The Author would like to thank to Indonesian Endowment Fund for Education (Lembaga Pengelola Dana Pendidikan, LPDP) for financially supporting to attendance of The Ninth Asian Conference on Education (ACE) 2017 held in Kobe, Japan (October 19—22, 2017). Also, a great gratitude is for SMK Negeri 1 Cerme to help the authors in collecting the data.
References


**Contact email:** ilmatussadiyah@gmail.com