

# INCULCATION OF ISLAMIC VALUES THROUGH CHEMISTRY SHORT STORY (CERPEN) FOR SENIOR HIGH SCHOOL

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## **Abstrak**

Penerapan nilai keislaman melalui pembelajaran kimia harus didukung oleh kegiatan guru. Penelitian ini bertujuan untuk menanamkan dan mengintegrasikan nilai-nilai keislaman melalui cerpen sebagai media pembelajaran kimia. Penelitian ini diprakarsai oleh perkembangan cerpen kimia dan dilanjutkan dengan proses validasi oleh para ahli materi, ahli media, ahli bahasa, dan peer-reviewer. Tiga guru kimia dan 10 siswa SMA dinilai dengan menggunakan cerpen yang telah divalidasi. Instrumen yang digunakan dalam penelitian ini adalah pedoman wawancara dan lembar observasi untuk penelitian awal dan lembar validasi, 5 lembar skala penilaian (terdiri dari 11 aspek), dan lembar jawaban siswa untuk menentukan kualitas cerpen. Pembuatan cerpen kimia mengikuti model 4D yang terdiri dari 4 tingkatan: Define (definisi), Design (pembuatan), Development (pengembangan), and Disseminate (diseminasi), tapi dibatasi pada tingkat Development (pengembangan). Hasil penilaian dan jawaban/respon siswa sebagai data kualitatif dikonversikan menjadi kuantitatif, kemudian dianalisa menggunakan statistik deskriptif untuk menentukan kualitas media tersebut. Penelitian ini berhasil mengembangkan sebuah cerpen kimia untuk pelajaran unsur-unsur kimia. Cerpen tersebut berhasil mengintegrasikan dan menerapkan nilai-nilai keislaman yang agamis, bertanggung jawab, bekerja keras, rasa ingin tahu, persahabatan, dan

komunikatif. Cerpen kimia ini disusun dengan alur cerita yang disertai ilustrasi. Integrasi nilai-nilai keislaman ditunjukkan melalui presentasi dan alur dalam cerita. Untuk aspek integrasi nilai-nilai keislaman khususnya, media ini mencapai skor 66/75 (sangat baik). Hasil analisis dari keseluruhan data menunjukkan bahwa cerpen kimia memiliki kualitas yang sangat baik menurut 3 guru SMA di Yogyakarta dan Kertosono, Nganjuk, Jawa timur. Rata-rata total skor yang dicapai adalah 450/510. Cerpen kimia ini menerima respon positif dari siswa dan mencapai skor 151/160 (94,37% persentase ideal). Hal ini dapat disimpulkan bahwa nilai-nilai keislaman dapat diintegrasikan kedalam pelajaran kimia melalui cerpen. Selanjutnya, cerpen dapat digunakan sebagai sumber belajar yang independen.

**Kata Kunci:** Nilai-nilai Keislaman, Cerpen, dan Unsur

### **Abstract**

*Inculcation of Islamic values through chemistry learning should be supported by teacher's creativity. This research aims at inculcating and integrating Islamic values through a short story as a chemistry learning media. The study initiated by developing the chemistry short story and proceeded with the validation process by materials experts, media specialists, linguists, and peer reviewers. Three chemistry teachers and 10 high school students assessed the validated-short story. The instruments used in this study were interview's guidance and observation sheets to preliminary study and validation sheets, 5 scale assessment sheets (consists of 11 aspects), and students' response sheets to determine the quality of short story. The production of chemistry short story followed the four-D model, which consists of four stages: Define, Design, Development, and Disseminate, but limited to the stage of Development. Results of assessment and response as a qualitative data was converted to quantitative, then analyzed using descriptive statistics to determine the quality of those media. This study succeeded in developing a chemistry short story for the subject matter of Chemistry of Elements. This short story successfully integrate and inculcate Islamic values, which were religious, responsibility, hard work, curiosity, friendship, and communicative. Chemistry short story was structured with a storyline that accompanied illustration. The integration of Islamic values demonstrated through the presentation and storyline in the stories. Especially for the aspect of integration of Islamic values, this media score obtained at 66/75 (Very Good). Results of the analysis of the overall data showed that the chemistry short story has a Very Good quality according to 3 high school chemistry teachers in Yogyakarta and Kertosono, Nganjuk, East Java. The average total score obtained at 450/510. This chemistry short story received a positive response from students*

and reached a score 151/160 (94.37% ideal percentage). It can be concluded Islamic values can be integrated into chemistry subjects through short story. In addition, the short story can be used as a source of independent learning.

**Keywords:** Islamic values, chemistry, short story, and elements

## A. Introduction

Understanding the integration of science and technology with the religion (Islam) in the context of modern science can be regarded as professionalism or competence in a particular field of science earthly divinity consciousness. However, awareness of divinity will not appear in the absence of elementary knowledge of Islamic sciences. Therefore, Islamic sciences with personality are two aspects which mutually support each other and jointly become a foundation for the development of science and technology. In other words, the integration of science means the integration of the mastery of science and technology with the sciences of Islam and Islamic personalities.<sup>1</sup>

In line with the view of integration, Juhaya<sup>2</sup> states that the emergence of science was triggered because the goal is to enhance human beings in worship to Allah. Some proposed paradigm suggests that scientific development should be cohesive, integrative or based on science tauhidullah. This science tauhidullah development was based on two bases. First, based on the historical roots of Islamic civilization primarily on pioneering Muslims in empirical science. Second, the various paradigms related to the development of science is built on the foundation of a blend of revelation with reason or naql that guide aql.

Strong morals integration of deepening religious teachings (tafaquh fid-diin) need to be actualized through understanding and practice.<sup>3</sup> This is in line with the understanding and practice of Islamic values are universal (tafaquh fin-naas) in social matters (umatisasi). The understanding appears in togetherness as a fruit of

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<sup>1</sup> Maman Kh., *Urgensi Memadukan Kembali Sains dan Teknologi dengan Islam*, (Jakarta: Pusbangsitek, 2011,) h. 1 - 6.

<sup>2</sup> Juhaya. *Mengintegrasikan ilmu (Sains Tauhidullah)*, (Bandung: Konsorsium Bidang Ilmu (KBI) UIN Sunan Gunung Djati Bandung, 2006) h. 107.

<sup>3</sup> Jafar, M. Shodiq, *Internalisasi nilai-nilai karakter dalam pembelajaran bahasa Arab*, (Yogyakarta: Al-Bidayah, Vol. 6 No. 2, Desember 2014, h. 215.

piety, and behave responsive to the revolution era. One area that can be used as a bridge of understanding is through a learning process; learning materials and processes that integrate the values of religious ethics (commendable morals) with the concept of science will give strength to the students. The strength of the students in enhancing faith and godly and be able to take advantage of nature as a source of strength.<sup>4</sup>

Nowadays, chemistry learning process in some schools are still not able to integrate Islamic values, which are less significant and less attractive<sup>5</sup>. Most of the students thought that the chemistry was a difficult subject, so they showed less activity during the learning process. In fact, if teacher can associate the concept of chemistry with Islamic values, the learning process can be considered more meaningful for life. It is also felt by some chemistry teacher<sup>6</sup> who revealed that the learning process is still less attractive especially in the subject matter of Chemistry of Elements. They said that Chemistry of Elements is very theoretical and students tend to memorize the content.

To improve students' motivation to learn Chemistry of Elements, some chemistry teachers (SMA Banguntapan Yogyakarta, MA Wahid Hasyim Yogyakarta, and MAN Nganjuk Kertosono) use various teaching methods, such as lecturing, discussions, using card and crossword puzzles, as well as applying a literature review. According to student,<sup>7</sup> learning media used by teachers was still

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<sup>4</sup> Mawardi, Imam. *Kebenaran dalam Perspektif Filsafat Ilmu*, dalam <http://mawardiumm.blogspot.com/2008/02/kebenaran-dalam-perspektif-filsafat.html>, 2008, h. 27, diakses pada tanggal 9 Desember 2015.

<sup>5</sup> Interview with students of class XII IPA 2 in SMAN 1 Banguntapan Yogyakarta on January 21, 2014 at 12.00, students of class XII IPA IPA 3 and 4 in MAN Kertosono, Nganjuk on February 16, 2014 at 12:20, students of class XII IPA 1 and XII IPA 2 MA Wahid Hasyim Yogyakarta on January 14, 2014 at 11:15

<sup>6</sup> Interview with Suwarti as a chemistry teacher in class XI and XII MA Wahid Hasyim Yogyakarta on January 14, 2014 at 10:00, Bakti Mulatsih as a chemistry teacher in class XI and XII Banguntapan SMAN 1 Yogyakarta on January 21, 2014 at 11.00, Mohamad Maskur S. Pd as a chemistry teacher at MAN Kertosono Nganjuk on June 8, 2013 at 11:30

<sup>7</sup> Interview with students of class XII IPA 2 in SMAN 1 Banguntapan Yogyakarta on January 21, 2014 at 12.00, students of class XII IPA IPA 3 and 4 in MAN Kertosono, Nganjuk on February 16, 2014 at 12:20, students of class XII IPA 1 and XII IPA 2 MA Wahid Hasyim Yogyakarta on January 14, 2014 at 11:15

deemed less attractive. Teachers should be able to develop appropriate learning media creatively and innovatively.

Chemistry short story is one alternative that is expected to make students interested in learning chemistry. Chemistry of Elements is explained through the story with elements that act as figures. Some students<sup>8</sup> said that if the Chemistry of Elements can be presented in the form of short story, it would be able to attract the students to learn chemistry deeply and also reduce the surfeit of learning.

Teachers can use the literature in learning as an instrument of moral good and the inculcation of Islamic values. Teachers can teach moral goodness and Islamic values through the learning process. As similar, base competencies in the curriculum 2013 suggest that teachers should inculcate behavior of honest, responsible and able to interact effectively with the social environment. Teachers should try to lead students to use their imagination well.<sup>9</sup>

Inculcating Islamic values can be done in various ways. Based on the interview<sup>10</sup>, Islamic values can be integrated through a story. Besides gain their academic knowledge, students also receive moral knowledge and good morals. The Islamic values possessed by the student deemed to be lacking, as evidenced by the frequent student violates school rules like do not comply with school rules.

Preliminary study of the inculcation of Islamic values has been done in SMAN 1 Banguntapan. The school has held a Quran literacy and moral guidance, but there are still some students who do not have an awareness to obey the rules and implement it. Furthermore, when given the individual task, students still do not work individually and have a dependence with another students proven by the same answers they gave. On the other hand, there are some students who

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<sup>8</sup> Interview with students of class XII IPA 2 in SMAN 1 Banguntapan Yogyakarta on January 21, 2014 at 11:40, students of class XII IPA 3 and 4 in MAN Kertosono, Nganjuk on February 16, 2014 at 12:10, students of class XII IPA 1 and XII IPA 2 MA Wahid Hasyim Yogyakarta on January 14, 2014 at 11:00

<sup>9</sup> Huitt, W. (2004). *Moral and character development. Educational Psychology Interactive*. Valdosta, GA: Valdosta State University. Retrieved [date], from <http://www.edpsycinteractive.org/morchr/morchr.html>

<sup>10</sup> Interview with Bekti Mulatsih as chemistry teacher of class XI and XII in SMAN 1 Banguntapan Yogyakarta on January 22, 2014 at 11:00 and Suwarti S. Pd as chemistry teacher of class XI and XII in MA Wahid Hayim Yogyakarta on January 22 at 10:15

are difficult to get along with their friends. Therefore, to inculcate Islamic values would be easier and striking when conveyed through stories that are packed in the form of short story.<sup>11</sup>

Short story that will be used in the inculcating Islamic values is a Chemistry Short Story. This short story contains Chemistry of Elements material, in which the elements will be elaborated into a character and an interesting storyline. This chemistry short story also pursued can show Islamic values that can help students become a good person and have an akhlakul karimah.

Thus, this study aims to integrate and inculcate Islamic values into the chemistry short story, assess the quality of chemistry short story, as well as know the students' response to this short story. Chemistry short story is also expected to facilitate students to learn chemistry with a different atmosphere and fun. Moreover, this short story is also expected to be an inspiration for lecturer and high school teachers in integrating Islamic values in each subject.

## **B. Research Method**

A Research and Development (R & D) method was employed in this study by using the 4-D model proposed by Thiagarajan, Semmel, and Semmel<sup>12</sup>. This study was done by three stages: Define, Design, and Development. The Dissemination Stage was not performed in this study. The procedure in this study adapted the 4-D model as follow:

### **1. Define**

Define stage was conducted by need analysis, which includes the analysis of the applicable curriculum at SMA/MA, analysis of student characteristics, analysis of chemistry teachers' perceptions about learning Chemistry of Elements, the study of Islam and the integration of science, as well as an analysis of the Islamic value which can be inculcated through the chemistry subjects. Analysis of the students was the study of the characteristics of students in accordance with the design and development of instructional media.

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<sup>11</sup> Yuliawati, Fitri., Penerapan Pendidikan Karakter yang Terintegrasi dalam Pembelajaran Sains di Madrasah Ibtidaiyah DIY, *Al-Bidayah*, Vol. 6 No. 2, Desember 2014, page 118.

<sup>12</sup> Trianto. *Model Pembelajaran Terpadu*, (Jakarta: PT Bumi Aksara, 2011, h. 93).

Discussion with chemistry teachers was conducted to determine the characteristics of the students.

## 2. Design

Design stage was conducted to design the chemistry short story, which include: the format selection, the collection of reference material, and the initial design of the product.

## 3. Development

It stage was conducted to make the product, validate product based on input and advice from linguists, materials experts, media experts, and peer reviewers. Chemistry short story that has a valid assessment rated by 3 teachers and responded by 10 students.

## 4. Dissemination

This stage is the field test and was not conducted in this study.

Data collection instruments in the study include:

- a) The guidelines for unstructured interviews, used to collect data on the define stage. Interviewees were teachers, principals, and students.
- b) The quality assessment of chemistry short story, was used to assess the quality of the stories, covering aspects:

### 1. Feasibility Component of Content

- a. Supporting educational purposes
  - Presentation of the short story that supports the inculcation of Islamic values.
- b. Validity content
  - The authenticity of the text of the material presented.
- c. Conformity with the readers' mind
  - Presentation of the material associated with critical thinking, creative, innovative and logical
- d. Conformity with the development of science and technology
  - The suitability of the material with the concept of chemistry of elements

- The suitability of the material with science, technology and environment
- e. Depth and breadth of the concept
  - Conformity with students' cognitive development
  - Implementing of content
- 2. Presentation Components
  - a. Creativity development
    - Encourage students' curiosity
    - Encourage students' interest to gather information
  - b. Integration of Islamic values
    - Presentation materials which integrate Islamic values
  - c. Academic skills development
    - Guide students in solving problems
- 3. Components Grammar and Short Story
  - a. Language accuracy
    - Coherency
    - Spelling and punctuation
    - Term accuracy
  - b. Chemistry short story production
    - Considering the intrinsic elements
    - Considering the characteristics of the short story
- 4. Graphic Components
  - a. Layout and graphic elements
    - Clear illustrations
    - Typography

This assessment tool has been validated logically by consulting the faculty members. Teachers assess the quality of short story using the validated-assessment tool. Data of 3 chemistry teachers assessment were then analyzed using descriptive statistical based categorical in Table 1.

**Tabel 1. Conversion of Actual Score to Five-Scaled Data**

No	Rentang skor (i)	Category
1.	$X > \bar{\chi} + 1,80 SB_i$	Very Good
2.	$\bar{\chi} + 0,60 SB_i < X \leq \bar{\chi} + 1,80 SB_i$	Good
3.	$\bar{\chi} - 0,60 SB_i < X \leq \bar{\chi} + 0,60 SB_i$	Sufficient
4.	$\bar{\chi} - 1,80 SB_i < X \leq \bar{\chi} - 0,60 SB_i$	Deficient
5.	$X \leq \bar{\chi} - 1,80 SB_i$	Very Deficient

For

$\bar{\chi}$  = mean of ideal score =  $(\frac{1}{2})(\text{highest ideal score} + \text{lowest ideal score})$

$SB_i$  = standart deviation of ideal score

=  $(\frac{1}{2})(\frac{1}{3})(\text{highest ideal score} - \text{lowest ideal score})$

Highest ideal score =  $\Sigma \text{ criteria} \times \text{highest score}$  Lowest ideal score

=  $\Sigma \text{ criteria} \times \text{lowest score}$

1. Questionnaire student response form Guttman scale with 2 choices of answers, "Yes" and "No". Students respond to the modules on aspects:
  - a. Students' interest towards chemistry subjects
  - b. clarity of language and sentence
  - c. appearance
  - d. inculcating of Islamic values
  - e. feasibility contents

Results of student responses were analyzed by using percentage.

## C. Result and Discussion

### 1. The Development Process of Chemistry Short Story

#### a. Define

This stage was done by analyzing the curriculum, materials, and characteristics of students. Analysis of the curriculum is determined by selecting the subject matter that will be developed into a short story, namely Chemistry of Elements. Analysis of the material is done by formulating learning objectives, that students are expected to:

1. have a sense of responsibility and hard work in carrying out his duties as a student.
2. increase faith and diligent in worship to God.
3. have a high curiosity as well as having a friendly and communicative nature, so better able to interact with everyone.
4. mention the physical and chemistry properties of main group elements based on characteristic of each element through literature study.
5. explain the benefits (usefulness) of each main group elements in everyday life through the medium of literature study.
6. describes the impact of (hazard) of each of the main group elements in everyday life through literature study.

Analysis of the characteristics of students conducted by interviewing the teachers in SMA 1 Banguntapan and MA Wahid Hasyim, where data showed that students tend to have a bond to pick if given the task, less activity in the classroom, having a cheating, not independent in the task group, and having affraid to ask. Although the school has been conducting morals building and facilitating several ways to improve students morality, but a lot of students did not implement it properly.

#### **b. Design**

Design stage was done by: Selection of the short story format, reference collection, and layout drafting and Making a storyboard for each subtheme and designing into paperwork

Every subtheme contains Islamic values that blended through story line. It has an interesting illustrations and pictures to support the storyline. The illustrations and pictures were used to attract the students' interest to read and learn chemistry deeply. It also can reduce student surfeit and give the alternative media to learn chemistry. The Islamic values that successfully inculcating to this short story were religious values, hard work, responsibility, curiosity, friendly and communicative.

The short story has several components, as follows.

1. The title page; The short story consists of 7 subthemes, that it has a title for each subtheme:
  - a. Tunggu Aku di Batas Senja
  - b. Warna-warni Kehidupan
  - c. Akan ku Hias Mimpiku dengan Doa
  - d. Kasih Sayangmu Takkan Terganti
  - e. Janji Arsenik
  - f. Oksigen kau Sangat Istimewa
  - g. Astatin yang Misterius dan Ku Tak Bisa Memilikimu
2. Preface: is a thank you to those who contributed to the making of short story and brief information about the content and purpose of the short story
3. Table of contents
4. Introduction
5. Illustration pictures for each story
6. A moral message
7. Linking the material with daily life

**c. Development**

The design of a product that has been made, then developed into a chemistry short story of Chemistry of Elements. Once the finished product is developed, the product was validated by materials experts, media specialists, linguists, and peer reviewers. Short story that has been validated then assessed by three high school chemistry teachers and responded by ten students (8 students of class XII IPA and 2 class XI IPA) in Yogyakarta and Kertosono, East Java to determine its quality.

Some examples of products made revisions based on input from expert lecturers were:

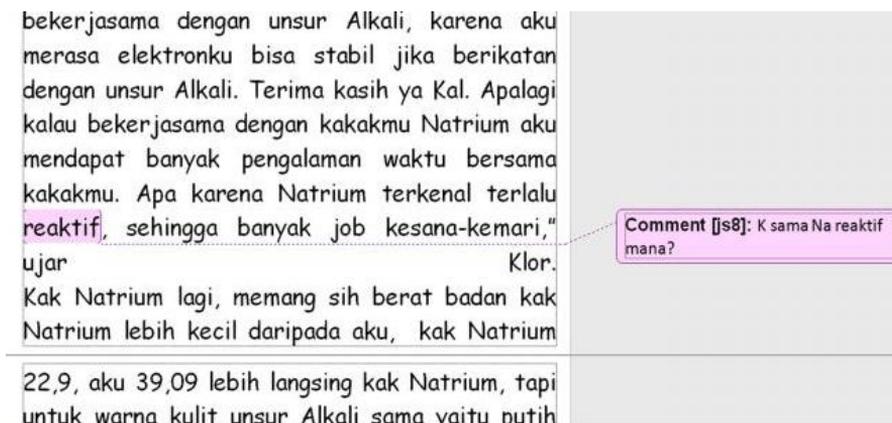


Fig. 1 Before revision

“Kak Natrium lagi, memang sih berat badan kak Natrium lebih kecil daripada aku. Kak Natrium 22,9, aku 39,09 lebih langsing kak Natrium, tapi untuk warna kulit unsur Alkali sama yaitu putih keperakan dan tubuh kita lunak, sehingga dapat diiris-iris. Hmm.. padahal aku lebih reaktif daripada kak Natrium, sehingga banyak job kesana-kemari, coba Klor sering bekerjasama denganku” gumam Kalium sedikit kecewa dalam hatinya.

Hari sudah menjelang siang sudah saatnya Kalium dan Klor berpisah dan harus mengerjakan tugas lainnya yang telah menanti.

Fig. 2 After revision

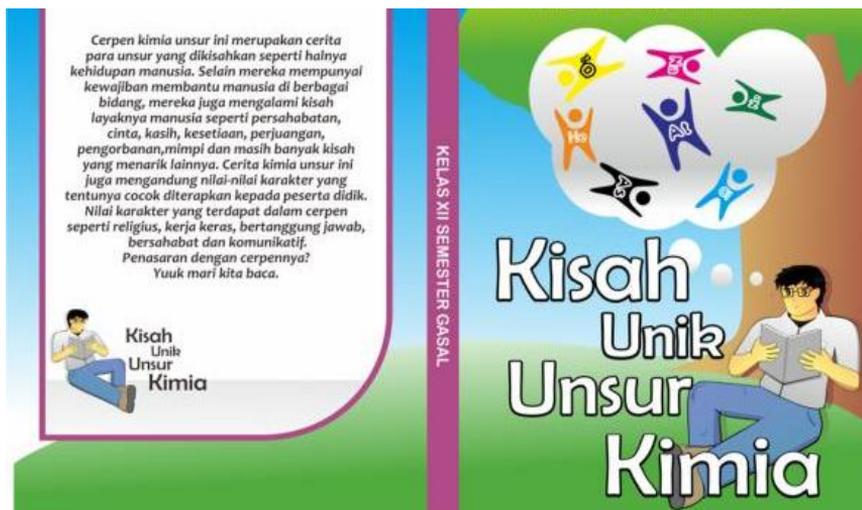


Fig. 3 Revised cover

## 2. Quality of Chemistry Short Story

Three chemistry teachers involved assessing the quality of chemistry short story. The recapitulation of the assessment is presented in Table 2.

Table 2. The recapitulation data of teacher assessment

No	Aspects	Total Score	Total Ideal Score	Ideal Percentage (%)	Category
1	supporting educational purposes	53	60	88,30	VG
2	validity content	42	45	93,30	VG
3	conformity with the reader's mind	40	45	88,80	VG
4	conformity with the development of science and technology	41	45	91,10	VG
5	the depth and breadth of the concept	54	60	90	VG
6	creativity development	26	30	86,70	VG

No	Aspects	Total Score	Total Ideal Score	Ideal Percentage (%)	Category
7	integration of Islamic values	66	75	88	VG
8	academic skills development	14	15	93,30	VG
9	language accuracy	49	60	81,60	G
10	chemistry short story production	27	30	90	VG
11	layout and graphic elements	38	45	84,40	VG
		450	510	88,23	VG

According to Table 2, the total score is closed to ideal for every aspect. Teacher assessment shows at the aspects of validity content, conformity with the development of science and technology, academic skill development, the depth and breadth of the concept, chemistry short story production scored close to the ideal score with ideals percentage 93.30%; 91.10%; 93.30%; 90% and 90% respectively with Very Good (VG) categories. Nevertheless, at the aspect of language accuracy gets a category Good (G). Overall, teachers' assessment indicates the chemistry short story is already to use as a media for chemistry learning.

The final score obtained for a chemistry short story that has been developed is 450 out of a maximum score of 510 with a percentage of 88.23% ideals and obtain quality category Very Good (VG). The quality of the chemistry short story from all aspects of the assessment obtained based on the criteria of an ideal assessment category at Table 3.

Table 3. Categorization Score

No	Category	Score Range
1	<i>Very Good</i>	142,806 < X
2	<i>Good</i>	115,602 < X ≤ 142,806
3	<i>Sufficient</i>	88,398 < X ≤ 115,602

4	<i>Deficient</i>	$61,194 < X \leq 88,398$
5	<i>Very Deficient</i>	$X < 61,194$

Aspects of the integration of Islamic values obtained a score of 66/75 (88%). This aspect has five criteria, namely: (1) Presentation of the material as a driving force in forming the character of students based on religious values, (2) The presentation of the material as a driving force in shaping the character of students based on the value of responsibility, (3) Presentation of the material as a driving force in the formation of student character based on the value of curiosity, (4) Presentation of the material as a driving force in shaping the character of students based on the value of hard work, (5) Presentation of the material as a driving force in shaping the character of students based on grades friendly and communicative.

### 3. Data from student response

Response to chemistry short story carried by students which several aspects such as student interest toward chemistry lesson, language and sentence clarity, overall layout, Islamic values inculcation, and content validity. Data from 10 students' responses to the Chemistry Short Story are presented at Table 4.

Table 4. The data of students responses to Chemistry Short Story

No	Aspects	Total Score	Total Ideal Score	Ideal Percentage (%)
1	Student interest toward chemistry lesson	28	30	93,3%
2	Language and sentence clarity	37	40	92,5%
3	Overall layout	36	40	90%
4	Islamic values inculcation	20	20	100%
5	Content validity	30	30	100%
		151	160	94,37

Student responses toward chemistry short story in Table 4 obtained a total score of 151/160 with an ideal percentage of 94.37%.

The highest ideals percentage was on Islamic values cultivation and the content validity aspects. Item response to aspects of the cultivation of Islamic values, were (1) The contents of the story containing moral values (obedience in worship, obedient to parents, responsible for the given task), (2) The material presented in the story include information about moral issues ever encountered e.g. less commendable action (denounce fellow). Item responses on the content validity aspect were (1) the material is presented clearly, (2) the material presented is easy to understand, (3) the material presented are created with interesting story line.

The lowest ideal percentage is on layout aspect with a percentage of 90%. It contains 4 statements: (1) interesting cover, (2) systematically page layout, (3) readable font size, and (4) interesting color composition. For the cover aspect, 8 respondents gave a positive response and 2 respondents gave a negative response. Some of them gave advices that the cover can be made more interesting and attractive by adding relevant pictures.

Students also gave a high positive response for the aspect of interest and language and sentence clarity. Item responses for student interest toward chemistry lesson aspect contains three statements: (1) I am more interested in learning about theoretical concepts such as Chemistry of Elements by reading short story, (2) the chemistry short story motivated me to learn more and make learning chemistry fun, (3) chemistry short story provided clarity in understanding the Chemistry of Elements material.

In this aspect, at statement number 1: "I am more interested in learning about theoretical concepts such as Chemistry of Elements by reading short story", 9 respondents gave a positive response and one of the respondents gave a negative response. In the statement: "chemistry short story provided clarity in understanding the Chemistry of Elements material", 9 respondents gave a positive response, and one of the respondents gave a negative response.

In the aspect of language and sentence clarity contains four statements: (1) it use simple language and communicative, (2) the language does not give rise to a double interpretation, (3) the words used is relevant with students, (4) the story line is used coherently.

In this aspect, the statement number 1: "it use simple language and communicative", 9 respondents gave a positive response and 1 of the respondents gave a negative response. In the statement: "the language does not give rise to a double interpretation", 8 respondents gave a positive response and 2 respondents gave negative responses. In the aspect of overall layout, 8 respondents gave a positive response and 2 respondents gave negative responses.

#### **D. Conclusion**

The integration and inculcation of Islamic values can be done to each of subjects including chemistry by a chemistry short story. Chemistry short story developed through 4-D model, validated by materials experts, media experts, peer reviewers, and assessed by three chemistry teachers and responded by 10 students of senior high school in Yogyakarta and Kertosono, East Java. Islamic values, which were successfully integrated through a chemistry short story, were religious, responsibility, hard work, curiosity, friendship and communicative. Chemistry short story was designed by systematically storyline that accompanied the illustration on each story, as well as inspiring sentences. Chemistry Short Story has a Very Good quality (450/510) according to the three high school chemistry teacher and responded positively by 10 students with a score of 151/160 [.]

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