Competency achievement indicators in Indonesian high school electronic school books: Overview of the development of creative-innovative thinking aspects

Imam Safi'i*, Wini Tarmini, Ade Hikmat, Prima Gusti Yanti
Graduate School of Indonesian Language Education, Universitas Muhammadiyah Prof. DR. HAMKA Jakarta, Jln. Warung Jati Barat, Jakarta Selatan, Indonesia
[1]imamsafii2077@uhamka.ac.id, adehikmat@uhamka.ac.id[2], winitarmini@uhamka.ac.id[3], prima_gustiyanti@uhamka.ac.id[4]
***Corresponding author:** imamsafii2077@uhamka.ac.id

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ABSTRACT

Creative-innovative thinking is an important competency to be developed in students so that they can be equipped in solving various challenges they face. One of the efforts to increase student competence can be done through the provision of textbooks. The purpose of writing this article is to explain the results of research on creative-innovative aspects which are indicators of competency development in high school electronic school books. The method used is content analysis, namely through excavation and in-depth meaning of various data on creative-innovative aspects in indicators of achievement of Indonesian high school electronic schoolbook competencies. The source of the data in this study was the Indonesian language electronic school book for SMA class X, XI, and XII published by the Ministry of Education and Culture. Based on the research that has been done, data is obtained, that in general the development of indicators of competency achievement has been associated with various creative-innovative aspects. However, there are still some creative-innovative aspects that have not been developed optimally, namely expressing creative ideas conceptually and practically, using failure as learning, and adapting and contributing to new situations. Each of these aspects is only 2.5%, 1.0%, and 0.5% of the total competency development indicators in the Indonesian high school electronic school book. The results of this study can be used as a basis for further development of creative-innovative aspects in Indonesian language textbooks.

Keywords	Competency achievement indicators, Creative-innovative, Electronic school books
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INTRODUCTION

Indicators of competency achievement contained in textbooks are one of the important supplements that must be considered by textbook compilers, teachers, and students. Indicators of competency achievement are the elaboration of basic competencies in the form of behavior that can be measured or observed to see the achievement of basic competencies that become the reference for assessing a subject (Mauliandri et al., 2021). The development of indicators of achievement of these competencies should be arranged according to the needs of students in dealing with various challenges of the times. One of them is in the form of student competencies related to creative-innovative thinking aspects.

The question is whether the preparation of indicators of competency achievement contained in Indonesian language electronic school books has been developed following the indicators of creative-innovative thinking. This question is important to be asked and followed up on because Indonesian is one of the core subjects in high school. One of the main contents of learning Indonesian is to improve students' creative and innovative thinking skills. Therefore, in-depth data mining regarding students' creative-innovative thinking in textbooks is important to do.

Creative thinking skills are one of the 21st-century skills that students must have (Madyani et al., 2020). Creative thinking in school-age children and adolescents has received considerable attention since the 1970s (Navarro Ramón & Chacón-López, 2021). Creativity is the substance of today's educational goals (Sayi & Akgul, 2021; Gibson, 2005). Creative and innovative are interrelated and influence each other. The essence of creative and innovative thinking is trying to realize new things (Dou et al., 2021; Zehui et al., 2019). Like other complex thought processes, creative thinking draws on higher-order cognitive resources (Redifer et al., 2021).

Creative thinking ability affects a student's academic performance (Yang & Zhao, 2021). There is a fairly positive and significant relationship between children's creative thinking scores and scientific process skills scores (Yildiz & Guler Yildiz, 2021). The creative learning environment and teacher coaching behavior both have a positive mediating effect (Ayyildiz & Yilmaz, 2021). Individuals who think creatively use their minds to create a new set of thoughts that contain various ideas, descriptions, concepts, experiences, and knowledge (Gie, 2003). Creative thinking is the competence to generate, assess and improve thinking to produce solutions (OECD, 2021). Creative performance must be based on motivation, self-efficacy, expertise, and creative thinking (Huang et al., 2020; Amabile, 1996).

Creativity can be interpreted as a kind of self-actualization to develop individual competence and intrinsic motivation (Cheng, 2019). Creativity assessment can be considered an attempt to identify creative abilities, solutions, and synthesis in any field (Suherman & Vidákovich, 2022). Creative thinking and critical thinking are complementary cognitive processes to deal with complex challenges (Álvarez-Huerta et al., 2022). Innovative thinking and the ability to solve problems are important skills to foster creativity (Berestova et al., 2021). Creative thinking can be developed with the help of various modern tools and mechanisms (Guan, 2021). Openness to experience and divergent thinking is considered important in creative achievement in real life (Wang et al., 2022).

In line with creative thinking, the innovation process consists of cognitive stages, attitude formation, decision-making, implementation, and confirmation stages (Li et al., 2021; Rogers (2003). Sustainability research claims that sustainability innovation can address complex global challenges (Hübel et al., 2022). The innovation aims to make updates through the right strategies (Seo & Park, 2022). Innovation is an important aspect to increase competitiveness (Bašić, 2021). Innovation is an important competency in the 21st century and is indispensable for improving student competencies (Usher et al., 2021). Therefore, all education providers must strive. One of them is the provision of textbooks as the main support for learning.

Textbooks are in the form of electronic school books that have a role as learning media as stated by Lau et al. (2018) and (Verkijika, 2019) should be supported by various components that can develop creative and innovative thinking skills for students. Some indicators of the ability of creative-innovative aspects are in the form of students' abilities in developing, implementing, and conveying new ideas, being open and responsive to new and different perspectives, expressing creative ideas conceptually and practically, using concepts or knowledge in new and different situations, using failure as a vehicle for learning, creating novelty based on prior knowledge possessed, and adapting in new situations and making positive contributions to the environment (Sutanto, 2017).

Several studies related to textbooks have indeed been carried out. For example, the Structure and language rules of folklore in Indonesian BSE class X SMA for the 2020/2021 academic year (Laila & Ibrahim, 2021), Analysis of exemplary values in biographical texts at BSE Indonesian class X SMA 2020/2021 academic year (Farhanah & Safi'i, 2021), and News text evaluation instruments in Indonesian BSE textbooks (Safi'i et al., 2021). Laila & Ibrahim's Research (2021); Farhanah & Safi'i (2021) are more concerned with the quality of teaching materials contained in textbooks, namely folklore texts and biographical texts. Safi'i et al. (2021) study relate to the quality of evaluation instruments contained in textbooks. Especially about basic

competencies in the 2013 curriculum. Then more specifically, the creative aspects in the mathematics learning curriculum applied in textbooks are carried out by Hadar & Tirosh (2019) through their research entitled creative thinking in mathematics curriculum: An analytic framework. In their research article, Hadar & Tirosh (2019) divides creative thinking skills in textbooks into three categories, namely lateral thinking, divergent thinking, and convergent-integrative thinking.

Based on the description of the four studies, it can be seen that no research specifically examines the creative-innovative thinking aspects contained in the indicators of competency development in high school electronic school books. Therefore, this research is important to do to get a concrete picture of aspects of creative and innovative thinking contained in the indicators of competency achievement. Because indicators of competency achievement can be the basis for implementing learning as well as the basis for setting goals and developing and implementing evaluations. Thus, it will also obtain an overview of how relevant the procurement of electronic school books is with various efforts to develop students' thinking skills in a more complex manner.

METHODS

The data source in this study was an Indonesian language electronic school book which was intended for students in grades X, XI, and XII and was published by the Ministry of Education and Culture. The data extracted and described are in the form of various aspects of creative-innovative thinking, namely in the form of competency development indicators that direct students to (1) develop, implement, and convey new ideas, (2) be open and responsive to new perspectives, (3) express creative ideas conceptually and practically, (4) Using concepts or knowledge in new situations, (5) use failure as a vehicle for learning, (6) create novelty based on prior knowledge, and (7) adapt and contribute to new situations.

The research technique used is content analysis, which is one method for understanding recorded human communica. The procedure used consists of data collection, data reduction, data presentation, drawing conclusions, and data verification. The research instrument developed is in the form of an analytical table consisting of seven categories of creative-innovative thinking. The data that has been collected is then analyzed by calculating and presenting each aspect with the number of indicators of overall competency development, using the following criteria.

Table 1
Percentage Range and Category of Creative-Innovative Aspect Development

Number	Percentage Range	Category
1	0.5 - 9.5%	Low
2	9.6 - 20.5%	Currently
3	20.6 - 30.5%	Tall
4	30.6 - 40.5%	Very high

Data on the development of creative-innovative aspects that have been analyzed are then grouped based on the categorization of their appearance in the indicators of competency achievement, namely low, medium-high, and very high. Furthermore, it will be discussed by relating it to several theories and the results of previous research. In addition, the meaning of the suitability and novelty of the research results that have been carried out will also be obtained.

RESULT AND DISCUSSION

Based on the research that has been done, several data are obtained regarding the development of creative-innovative aspects contained in the indicators of competency achievement in high school electronic school books. The following are the findings in question.

Table 2
Aspects of Thinking Creative-Innovative Thinking in Indicators of Competency Achievement of Indonesian High School Electronic School Books

Aspect	Total Development of Each Creative-Innovative Aspect			Quantity	%	Category
	Class X	Class XI	Class XII			
Develop, implement and convey new ideas	55	11	9	75	37.9	Very high
Be open and responsive to new and different perspectives	2	3	0	5	2.5	Low
Express creative ideas conceptually and practically	9	4	7	20	10.1	Currently
Using concepts or knowledge in new situations	4	37	28	69	34.8	Very high
Using failure as a vehicle for learning.	0	2	0	2	1.0	Low
Creating novelty based on prior knowledge possessed.	9	6	11	26	13.1	Currently
adapt and contribute to new situations	0	1	0	1	0.5	Low
Amount	**79**	**64**	**55**	**198**	**100.0**	
Average	**11.3**	**9.1**	**7.9**	**28.3**	**14.3**	
Percentage	**39.9**	**32.3**	**27.8**		**100.0**	

Based on the data in the table above, it can be seen that in general, the seven creative-innovative aspects have been well-developed in indicators of competency achievement in Indonesian high school electronic school books. Indonesian language textbooks for class X students are 79 39.9%, Indonesian language textbooks for class XI students are 64, and Indonesian language textbooks for class XII students are 55 or 27.8% of the overall competency development indicators.

Developing, implementing, and conveying new ideas is one of the competencies in the creative-innovative aspect that is quite complete. In it, there is an effort to develop something or something new that starts from things that are considered old and less relevant to the context. The development idea is then realized in a concrete form. The novelty that has been produced is then communicated or disseminated to others. Thus, the usefulness aspect will be more felt by other people. The number of competency development is as many as 75 indicators of competency achievement or 37.9% in the very high category. This number also shows that the development of creative-innovative aspects contained in high school electronic school books has been developed well. Mardliyah (2019), that in learning students are required to be able to develop, implement, and convey new ideas to others. This creative-innovative aspect is very important to develop because it is based on research results from Meilani et al. (2020) and Widiawati et al. (2018) there is a positive correlation between creative thinking skills and student learning outcomes.

The next creative-innovative aspect is being open and responsive to new and different perspectives. The creative-innovative aspect is one of the attitudes of thinking that describes maturity or maturity. There are two main competencies, namely being open and responsive. Being open means being willing to accept input, comments, and criticism from others for the common good. This openness will have implications for the emergence of a new perspective on a matter, that the opinion that he originally believed to be true may not be appropriate when applied in a different place. Therefore, some adjustments are needed so that things that are more contextual and effective will be found. This is in line with what was stated by Ramdani et al. (2019), that creative thinking on the other hand emphasizes divergent, productive, and creative ways of thinking. Creative thinking in creating innovations is one of the 21st-century skills that will make a person able to survive (Sridana et al., 2021). Efforts to develop aspects of being open and responsive to new things have not been developed optimally. There are only 5 indicators of competency development or 2.5% of the overall competency development indicators.

Furthermore, the creative-innovative aspect expresses creative ideas conceptually and practically. Expressing creative ideas conceptually and practically is the ability to express original ideas by starting from previous experiences. The idea is then put forward conceptually and also practically for its implementation. This ability is a higher-order thinking competence. To be able to express creative ideas, they must be based on various cognitive experiences, namely understanding, analysis, and evaluation. Expressing creative ideas is also part of problem-solving-based learning. When students are faced with a problem, students are expected to be able to look at the problem carefully and then look for creative ideas to solve the problem.

The indicators of competency achievement contained in electronic school books relating to the development of student competencies in expressing creative ideas are 20 or 10.1% of the total competency achievement indicators. This percentage shows that the effort to develop competence related to expressing creative ideas conceptually and practically has been developed quite well. Determination of indicators of achievement of these competencies can lead to the objectives of the implementation of learning carried out by the teacher. In addition, teachers can be used as a basis for developing assessment instruments to measure student competency attainment. The habit of creative thinking skills in expressing ideas conceptually and practically has a very positive influence on student's academic competence. This is in line with what was stated by Yang & Zhao (2021), that the ability to think creatively affects the academic performance of a student. That is, the higher the creativity of students, the higher their academic achievement of students. Yildiz & Guler Yildiz (2021) research results, also showed similar results, namely that there was a fairly positive and significant relationship between children's creative thinking scores and scientific process skills scores.

Using concepts or knowledge in new and different situations is part of applying cognitive competence, which is the ability to apply the knowledge that has been acquired in the form of new or different text constructions. For example, in learning activities, students are explained modeling the structure of the text and the language rules of biographical texts, argumentative texts, and editorial texts. Based on their understanding of the structure and linguistic rules of the text, students are then asked to compile or develop the various texts 69 or 34.8 (very high). This is in line with what was stated by Dinni (2018) and Astuti (2018), that a student is said to be able to solve problems if he can apply the knowledge that has been previously acquired to new situations that are not yet known.

The next creative-innovative aspect is using failure as a vehicle for learning. Success and failure are like two sides of a coin. That is, both are always inherent in every struggle that is carried out by someone. In essence, both have the potential to be used as a basis for individuals to achieve success. However, not all individuals can use it wisely, especially failure as a basis for success. The ability to use failure as a vehicle for learning reflects one's mental fortitude. When he met failure, he did not consider the event as the end of the struggle, but as part of the process to achieve success.

If referring to the Adversity Quotient (AQ) theory, the creative-innovative aspect of using failure as a vehicle for learning is one's ability to observe difficulties and process these difficulties into challenges to be solved (Purwasih, 2019). Adversity Quotient is a series of tools that have a scientific basis to improve a person's response to adversity (Diana, 2018). The development of indicators of competency achievement that aim to direct students' ability to take advantage of failure as a vehicle for learning contained in high school electronic school books has not been developed optimally. There are only 2 or 1.0% of the overall competency achievement indicators. This number is included in the low category.

Then the innovative-creative aspect of creating novelty based on prior knowledge can be termed as an anti-establishment attitude in a positive sense. Through indicators of competency achievement, students are directed not to be easily satisfied with what already exists or with the achievements that have been achieved but are directed to continue to be creative and carry out various updates. This attitude describes a dynamic person who constantly strives to develop. Thus, there are always forms of innovation. Efforts to develop creative-innovative attitudes have been well pursued, namely, there are as many as 26 or 13.1% of the indicators of overall competence achievement (enough). This creativity effort

needs to be developed because it can improve self-concept and improve students' academic performance (Roth et al., 2022).

Efforts to develop student creativity can be pursued in several ways. One of them is by utilizing or integrating technology into learning activities. As stated by Shirish et al. (2021), the use of information technology has a significant positive relationship with productivity and creativity. In learning the impact of digital technology on student creativity is diverse and depends on teaching strategies and learning behavior (Tang et al., 2022).

The last is the creative-innovative aspect of adapting to new situations and making a positive contribution to the environment, which is one of the attitudes of life that is relevant to the philosophy of the bamboo tree. The bamboo tree is one of the trees that has a high level of flexibility when compared to other types of trees. The bamboo tree is always blown by the wind and follows the direction of the wind, but the tree and its roots remain firmly in place. Likewise, with human life, every moment is also faced with various exposures, both in terms of academic, social, political, economic, and so on.

This adaptability is important to be developed in students because based on several research results, an adaptive attitude can support an individual's ability to achieve success. Continuous adaptation to the work environment is essential for achieving job and career success (Ohme & Zacher, 2015). In the business field, adaptation is an important requirement for the survival of the organization (Almutairi et al., 2021). Adaptability among student-athletes can be considered an important factor in supporting their academic achievement (Nikander et al., 2022). Adaptability is also closely related to the hope to develop (Stockinger et al., 2021).

The development of indicators of competency achievement related to increasing students' ability to adapt to the environment contained in Indonesian high school electronic school books has not been carried out optimally. There is only one indicator or 0.5% of the overall competency development indicators. The development of indicators to develop student competence in adapting and contributing to a new environment is indeed relatively more difficult, but that does not mean it cannot be done. In learning Indonesian, these efforts can be made by directing students to make observations of an environment that can be considered foreign or less pleasant for students. Students are asked to identify various things related to the environment and then give their responses in the form of suggestions if they live and are raised in an environment that is considered less pleasant. In addition, when the observation activity takes place, the teacher can also make observations about the attitudes of students in adapting to the environment they visit.

CONCLUSIONS

Creative-innovative aspects in indicators of competency achievement in high school electronic school books have been developed well, however, there are still some aspects that have not been developed optimally, namely expressing creative ideas conceptually and practically, using failure as a vehicle for learning, and adapting in new situations and making positive contributions to the environment. Respectively, only 2.5%, 1.0%, and 0.5% of the total competency development indicators are contained in the Indonesian high school electronic school book.

Efforts to develop student competence proportionally related to all creative-innovative aspects in the preparation of textbooks need to be carried out to support the improvement of students' creative-innovative competencies more optimally. Teachers can also use the results of this research as a basis for developing indicators of competency achievement and compiling evaluation instruments that can be used to measure and improve students' creative-innovative attitudes**.**

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