

## Portrait of The Effectiveness of Authentic Assessment Based on High Order Thinking Skills (HOTS) in Elementary School of Medan

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### Abstract

This study aims to describe the effectiveness of the implementation of authentic evaluations based on High Order Thinking Skills (HOTS) in Elementary School of Medan. This research is motivated by the government policy regarding the implementation of the 2013 curriculum which mandates the application of authentic HOTS-based assessments in elementary schools. Like a public policy, the implementation of HOTS-based authentic assessments needs further evaluation to see the effectiveness of its application in the field. This research is a descriptive study with a qualitative approach. There were two methods used: descriptive and evaluative methods. The results showed that 50% of teachers had not been able to implement authentic HOTS-based assessments in elementary schools of Medan. Based on these findings, it is concluded that the implementation of authentic HOTS-based assessments in elementary schools of Medan has not been effective. Thus, this study recommends that a comprehensive follow-up effort from various parties be needed, especially in improving teacher competence in formulating assessment instruments oriented to high-level thinking skills in elementary schools of Medan.

**Keywords:** authentic assessment, high order thinking skills, elementary school

### Introduction

21st century learning in Elementary School has goals with 4C characteristics, namely; Communication, Collaboration, Critical Thinking and Problem Solving, Creativity and Innovation. Based on the 4 characteristics stated, ways of thinking are very basic things that need to be considered in learning. This is in line with the results of research conducted by more than 250 researchers from 60 world institutions who are members of ATC21S (Assessment & Teaching of 21st Century Skills) grouping 21st century skills in 4 categories, one of the most important is the way of thinking (ATC21S Consortium, 2013 )

The ability to think is an ability to process mental operations which include knowledge of perception and creation. Thinking skills ability is the ability in using mind and understanding meaning on something, exploration of ideas, making decisions, problem solving with best consideration and revision on the previous thinking process (Suriyana in Arifin, 2017). Furthermore, it was also explained that "Thinking skills is a knowledge that can be learned and practiced until the form norm or experience (Maimunah in Nursaila & Faridah, 2015)." Following up on the explanation, it was explained that "Knowledge is obtained through higher-order thinking processes that are easily transferable, so that students with a deep conceptual understanding of ideas will be more likely to be able to apply knowledge to new problems (Jennifer, et al., 2013:48)."

Thinking ability is divided into two parts, namely low-level thinking skills (Low Order Thinking Skill or LOTS) and high-level thinking skills (Higher Order Thinking Skill or HOTS). Students' high-level thinking skills are one barometer of the nation's intellectual level. As an agent of change, students should be able to show their identity in intellectual, moral and elegant ways. Therefore, in the 21st century the learning process carried out at every level of education must be truly considered in order to produce competent graduates.

One effort that can be done to develop high-level thinking skills of students in elementary schools is to reform the learning patterns in the classroom. This refers to the statement that, “Science education worldwide is a constructivist views of teaching and learning. These reforms are explicitly asked for teaching and learning based on traditional textbook-based learning and inquiry-based learning in real-world phenomena (B. Miri, et al., 200:354).”

Based on the statement above, the teacher should be able to change learning patterns comprehensively based on high-level thinking skills and activity-based. The way that can be done to adopt this is to develop authentic HOTS-based assessments on each lesson. This is in accordance with the mandate of the implementation of the 2013 curriculum in elementary schools which mandated that the HOTS-based authentic assessment be implemented in elementary schools.

Like a public policy, the implementation of HOTS-based authentic assessments in elementary schools in accordance with the demands of the 2013 Curriculum needs to be reviewed for the effectiveness of implementation in various regions, including in Medan. This aims to obtain accurate data and information regarding the weaknesses and strengths of the implementation of HOTS-based authentic assessments at the elementary school level. Based on this data, new policies emerged related to efforts to overcome and prevent weaknesses in their implementation and efforts to increase their strength. Based on this study, policy formulation and supervision can then be carried out as an effort to optimize the implementation of authentic HOTS-based assessments in elementary schools, especially in Medan.

## Methods

This research is a descriptive study with a qualitative approach. The subjects in this study were teachers and students who were in 40 (forty) Elementary Schools in Medan. The object of research is teacher competence in formulating HOTS-based authentic assessment instruments and the success rate of students in answering the questions formulated.

Data collection in the field uses several techniques, namely interviews, observation, and documentation commonly referred to as data triangulation. Data triangulation is a data collection technique that is combining various data collection techniques and existing sources (Sugiyono, 2007:194).

The data analysis technique was carried out in a qualitative descriptive manner. The analysis process is carried out using qualitative models from Miles and Hubberman (2014) as commonly used are:

## Results and Discussion

### Research Results

This section explains the findings of the research on the implementation of authentic High Order Thinking Skill (HOTS) based assessments in 40 (forty) elementary schools in Medan. The findings of the study based on the analysis of the implementation of HOTS-based authentic assessments in elementary schools of Medan can be seen in detail in Table 1 below.

Table 1. Results of Analysis of the Implementation of HOTS-Based Authentic Assessments in Elementary Schools of Medan

No	Qualification	No of Teachers	Percentage (%)
1	Very Good	8	10
2	Good	32	40
3	Enough	36	45
4	Poor	4	5

Based on the distribution of data in Table 1, the following figures are obtained: (1) 8 teachers (10% of the total) are able to implement authentic HOTS-based assessments with the Very Good category, (2) 32 (40%) teachers are in Good category, (3) 36 (45%) teachers with Enough categories, and (4) 4

(5%) teachers are in Poor category. That is, 50% of teachers have not been able to implement authentic HOTS-based assessments in Medan elementary schools.

In simple terms, the description of teacher competency levels in implementing authentic HOTS-based assessments in elementary schools of Medan can be seen in Figure 1 below.



Figure 1. Teacher Competency Level in Implementing HOTS-Based Authentic Assessment in Elementary Schools of Medan

If examined further, the research findings as outlined in Figure 1 can be described as follows:

- The assessment instruments included in the Learning Implementation Plan are mostly more visible in the skill aspect.
- Many evaluation questions adopted directly from the Student Book.
- There is a discrepancy in the formulation of indicators with evaluation questions.
- Editor of question languages does not facilitate high-level thinking students.
- There are a small number of teachers who do not have document evaluation questions.

An example of the formulation of the questions in the HOTS-based authentic assessment that has been developed by the teacher can be seen in the following Figures 2 and Figure 3.

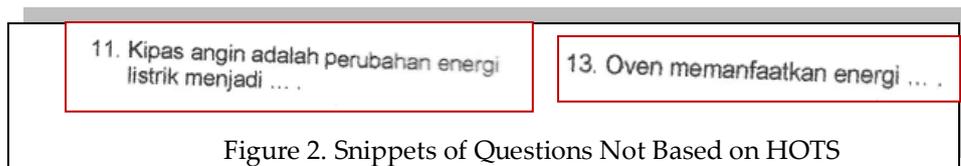


Figure 2. Snippets of Questions Not Based on HOTS

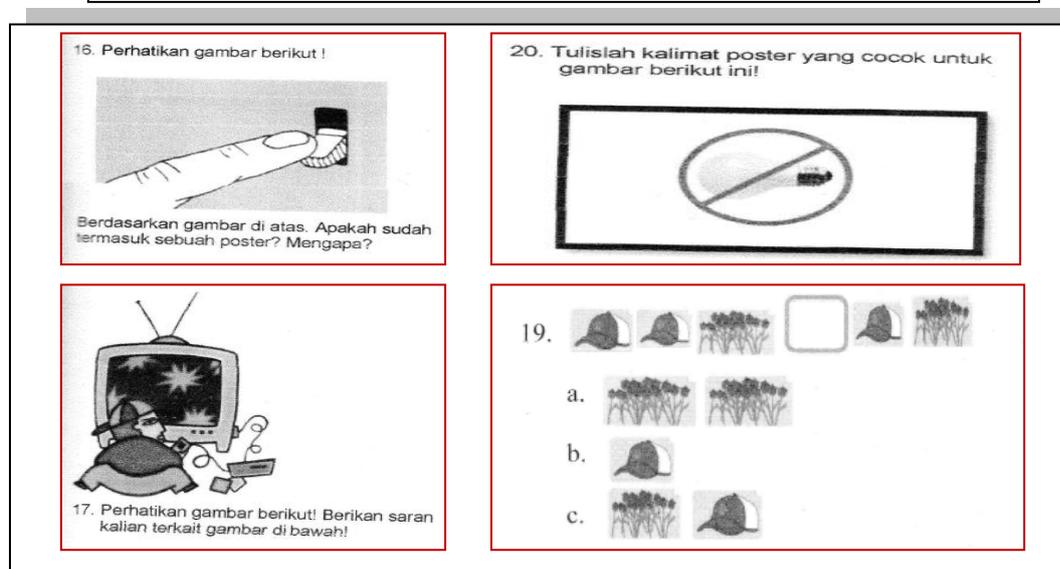


Figure 3. HOTS-based Question Snapshot

## Discussion

Refer to the Firman opinion (in Faisal, et al., 2018:547), which states that the success of a program is characterized by the following characteristics: (a) successfully delivering students to achieve predetermined instructional goals, (b) providing experience attractive learning, actively involving participants so as to support the achievement of instructional goals, and (c) having facilities that support the learning process. In addition, it was also explained that the success of the program was marked by a percentage of success of at least  $\geq 75\%$  in the good category.

Based on the opinions stated above, the average teacher competency level in formulating HOTS-based authentic assessment instruments in elementary schools of Medan is 74.81% with the Enough category. This means that elementary school teachers in Medan are in the Enough category in implementing authentic HOTS-based assessments. Based on this data, it can be concluded that the implementation of HOTS-based authentic assessments cannot be said to succeed as expected because it has not reached the 75% threshold. Thus, the implementation of authentic HOTS-based assessments in elementary schools of Medan still needs to be improved.

Some of the obstacles encountered in the authentic assessment formulated by the teacher can be seen in the following explanation:

- a. The assessment instruments included in the Learning Implementation Plan are mostly more visible in the skill aspect.
- b. Many evaluation questions adopted directly from the Student Book.
- c. There is a discrepancy in the formulation of indicators with evaluation questions.
- d. Editor of question languages does not facilitate high-level thinking students.
- e. There are a small number of teachers who do not have document evaluation questions.

## Conclusion

The findings of the study indicate that there are 50% of teachers who have not been able to implement authentic HOTS-based assessments in Elementary Schools of Medan. Based on these findings, it can be concluded that the implementation of authentic HOTS-based assessments in elementary schools of Medan has not run effectively as expected. Thus, this study recommends that a comprehensive improvement is needed, especially in increasing teacher competency in formulating assessment instruments oriented to high-level thinking skills in elementary schools of Medan.

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## References

- Arifin, Z. (2017). "Mengembangkan Instrumen Pengukur Critical Thinking Skills Siswa pada Pembelajaran Matematika Abad 21." *Jurnal THEOREMS*, Volume 1, Nomor 2, Januari 2017.
- ATC21S Consortium (2013). *A Partnership to Drive Change and Success in Education*. [http://vuir.vu.edu.au/24795/1/CE\\_2013090215242146.pdf](http://vuir.vu.edu.au/24795/1/CE_2013090215242146.pdf)
- B. Miri, et al. (2007). "Purposely Teaching for the Promotion of Higher-Order Thinking Skills: A Case of Critical Thinking." *Res Sci Educ*, 37 (1), 353-369.
- Faisal, F., Gandamana, A., & Andayani, T. (2018). Penguatan Kompetensi Guru dalam Pembelajaran Tematik sebagai Upaya Optimalisasi Kurikulum 2013 di SD Kecamatan Deli Tua Kabupaten Deli Serdang. *Jurnal Pengabdian Kepada Masyarakat*, 24(1), 544-550.

- Jennifer, L. S. R., et al. (2013). "Higher Order Thinking Skills and Academic Performance in Physics of College Students: A Regression Analysis." *International Journal of Innovative Interdisciplinary Research*, 12 (4), 48-60.
- Miles, M.B, Huberman, A.M, dan Saldana, J. (2014). *Qualitative Data Analysis, A Methods Sourcebook* Edition 3. USA: Sage Publications.
- Nursaila, S., dan Faridah. (2015). "Problem Solving Strategy in Balanced Forces." *International Journal of Bussiness and Social Science*, Vol. 6 (8), 94-98.
- Sugiyono, M. P. P. (2007). *Pendekatan Kuantitatif. Kualitatif, dan R&D*, Bandung: Alfabeta.