

Improving Teacher Ability in Preparing HOTS Questions Through In-House Training (IHT) at SD Negeri Ngaliyan, Samigaluh, Kulon Progo for the 2021/2022 Academic Year

Rumino^{1,*}

¹SD Negeri Ngaliyan, Samigaluh Kulon Progo

*Corresponding author: rumino2017@gmail.com

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ABSTRACT: This School Action Research aims to improve the ability of teachers in preparing questions based on Higher Order Thinking Skills (HOTS) through In-House Training (IHT) activities at SD Negeri Ngaliyan, Samigaluh for the academic year 2021/2022. This research is a school action research conducted in 2 cycles, where each cycle consists of 2 meetings. The implementation steps using research methods/procedures are carried out based on the stages of planning, implementation, observation, and reflection. The subjects of the study were the teachers of SD Negeri Ngaliyan, Samigaluh, Kulon Progo for the academic year 2021/2022, totaling 8 people consisting of 6 classroom teachers and 2 subject teachers. The results showed that the use of In-House Training (IHT) can improve the ability of teachers in preparing Higher Order Thinking Skills (HOTS) questions. The results of the first cycle of research at the 1st meeting obtained an average score of 3.15 with a percentage of 63.03%. When compared to the results of initial observations before the implementation of IHT, there was an increase of 13.03%. Then, in the first cycle for the second meeting, the average value was 3.58 with a percentage of 71.58%. Cycle II for the 1st meeting obtained an average score of 4.22 with a percentage of 84.30%. Cycle II for the second meeting obtained an average observation result of 4.62 with a percentage of 92.30%. The results of the observations when compared with the results of the second cycle of the 1st meeting there was an increase of; 8.00%. Meanwhile, the ability of the resource persons in delivering the material shows that the results of the observation of the first cycle of actions for the 1st meeting show the ability of the resource persons in delivering the material in the second cycle of the 1st meeting, the resource persons obtained an average score of 85.70 with a percentage of 80.59% or "Good" category. Cycle II at the second meeting obtained an average value of 91.22 with a percentage of 91.21%; with the category "Very Good". The results of participant observations on the ability of resource persons in delivering IHT material turned out to have increased by 5.51%. So it can be said that IHT activities can improve the ability of resource persons in delivering material on the preparation of HOTS-based questions..

Keywords: In-House Training (IHT), teacher, student, questions, HOTS

INTRODUCTION

Teachers are an important key in the success of improving the quality of education. One of the characteristics of good quality education is the creation of a good learning process, starting from planning, implementation and evaluation. In line with this, the teacher's ability to make tools to evaluate students is needed, one of which is questions or tests. Questions or tests are one type of instrument used to determine the ability of students to absorb the lessons given by the teacher [1].

Educational assessment standards are criteria regarding the scope, objectives, benefits, principles of mechanisms, procedures, and instruments for assessing student learning outcomes that are used as a basis for assessing student learning outcomes in primary and secondary education [2]. This statement means that measuring learning achievement is not only seen from the perspective of students in mastering the material but also in terms of attitudes, knowledge, and skills. The questions used must meet the level of readability based on the characteristics of the questions, this is the first step to optimize the level of thinking of students and the ability of teachers to answer and make

questions, besides that the teacher can find out the extent to which students understand the lessons that have been given for half a semester [1]

The assessment is carried out with the initial stages of understanding the nature of the assessment, understanding the scope of the domain or aspect being assessed, designing assessment procedures, compiling instruments, carrying out assessments, administering results, processing results, reporting results and using assessment results to conduct student coaching and improve learning [3].

Based on the results of observations, it shows that the ability of teachers in preparing questions is still very lacking, especially in terms of making HOTS-based questions. This fact is certainly very worrying, because if this condition is not immediately addressed, it will have an impact on decreasing the quality of education, and unable to compete with the surrounding schools. Because with the decline in the quality of education in schools, it is feared that it will reduce the value of learning outcomes for students. So based on these problems, it is necessary to take action steps that can overcome these problems. One method that can be done is to organize HOTS-based question preparation activities through In-House Training (IHT) activities.

In House Training is a training/training program organized by a school or organization by using its own training venue, own equipment, determining participants and by bringing in their own trainers, then providing equipment and bringing in trainers according to certain topics needed in the school they lead. This training is very necessary to be given to teachers [4]. In-House Training is training for teachers that is carried out based on the needs of the school, the participants are from one school, with training materials adapted by the school, especially in the use of teaching aids, and carried out at the school where the researcher works [5]. The various In-House Training activities include: 1) Peer teaching, 2) Observing learning videos, 3) education and training, 4) Workshops, 5) Seminars, 6) Discussions on Education, 7) Making teaching aids, 8) Research , 9) Writing books/teaching materials, 10) Making learning media and 11) Making works of technology/artworks [6].

In this study, the in-house training activities carried out were Education and training held at SD Negeri Ngaliyan, Samigaluh with materials for making HOTS-based questions for teachers at the school. According to Marsih [7] states that making questions that require high-level thinking requires adequate knowledge and abilities. Therefore, teachers are expected to be able to create and develop HOTS-oriented assessment instruments.

HOTS questions are questions that require high-level thinking skills, requiring abilities ranging from remembering, referring, applying to analyzing, evaluating, or creating. Implementation of HOTS in the context of the assessment, simply not only minimizes the ability to recall information, but rather measures the ability to: (1) transfer one concept to another, (2) process and apply information, (3) look for links from various different information -different, (4) use information to solve problems, and (5) examine ideas and information critically [8].

So the purpose of this study is to improve the ability of teachers in preparing HOTS questions and improve the ability of resource persons in delivering material during IHT activities with HOTS-based question preparation materials.

HOTS questions are assessments based on real situations in everyday life, where students are expected to be able to apply learning concepts in class to solve problems. Contextual problems faced by the world community today are related to the environment, health, earth and space, as well as the use of science and technology in various aspects of life. This understanding also includes how the skills of students to relate (relate), interpret (interpret), apply (apply) and integrate (integrate) knowledge in classroom learning to solve problems in real contexts. [9]. The following describes the five characteristics of contextual assessment [10]:

- a. Relating, the assessment is directly related to the context of real life experiences.
- b. Experiencing, an assessment that emphasizes exploration, discovery, and creation.
- c. Applying, an assessment that demands the ability of students to apply the knowledge gained in the classroom to solve real problems.
- d. Communicating, an assessment that requires the ability of students to be able to communicate the conclusions of the model to the conclusion of the problem context.
- e. Transferring, an assessment that demands the ability of students to transform knowledge concepts in the classroom into new situations or contexts.

RESEARCH METHODOLOGY

This type of research is a school action researcher conducted at the Ngaliyan State Elementary School, Kapanewon Samigaluh, Kulon Progo Regency for the 2021/2022 academic year. The implementation of this research starts from January to March 2022 from

the observation stage to the implementation of research or action. The subjects of this study were teachers at the Ngaliyan State Elementary School, Kapanewon Samigaluh, Kulon Progo Regency in semester 2 consisting of 8 people which included 1 teacher of Islamic religious education, 1 teacher of Physical Education, Sports, and Health subjects and 6 class teacher. The object of this research is to increase the ability of teachers in preparing questions based on Higher Order Thinking Skill (HOTS).

This research procedure consists of two cycles, namely a cycle that is carried out repeatedly and continuously. The cycle model consists of planning, implementation, observation and reflection. The research procedure chosen is by using the Spiral model. The design of this study is presented in Figure 1, while the assessment guidelines are presented in Table 1.

Table 1. Observation Assessment Guidelines

Score	Range	Category
1	$0 < X \leq 64$	Not Enough
2	$65 < X \leq 74$	Enough
3	$75 < X \leq 84$	Good
4	$85 < X \leq 100$	Very Good

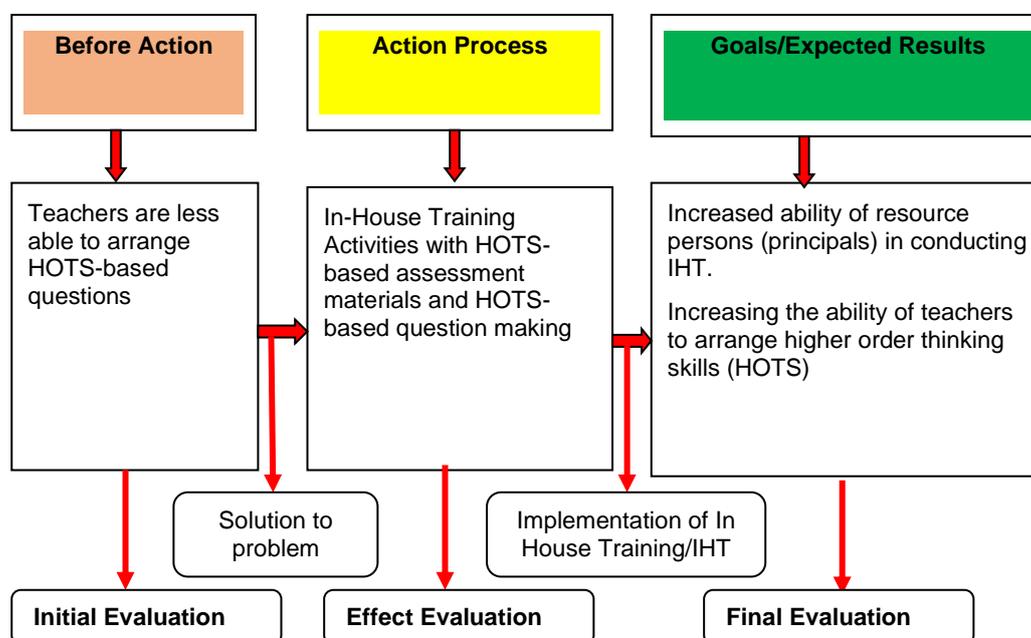


Figure 1. Research Design

RESEARCH RESULTS AND DISCUSSION

Based on the results of research conducted on improving the ability of teachers in preparing HOTS questions through In-House training, it shows that teachers at SD Negeri Ngaliyan in preparing HOTS questions are still relatively lacking. Teachers still have difficulty in making/composing HOTS questions due to lack of knowledge and understanding of what and how to compose HOTS-based questions.

SD Negeri Ngaliyan tries to overcome these problems so that teachers can arrange questions with good quality, especially those based on HOTS. The following stages explain the In-House training process in order to improve the ability of teachers in terms of preparing questions.

Before the In-House Training activity was carried out, a plan was prepared, then In House Training was carried out for the teachers of SD Negeri Ngaliyan Samigaluh. This activity consists of several cycles. In the first cycle, it was held for two meetings where the first meeting was given material about HOTS-based authentic assessment. Furthermore, at

the 2nd meeting the teacher was given material about HOTS-based questions and characteristics, levels of difficulty and so on. During the In-House Training activities, researchers and observers conducted observations to observe the processes and activities of teachers in participating in IHT activities. At the end of the first cycle, the teachers were asked to arrange HOTS questions and their grids.

If the first cycle is expected to show an increase compared to before. Therefore, the researcher continued the action in the second cycle. In the second cycle, In House Training activities were carried out for two meetings. In cycle II, this is actually just a maturation of how the HOTS questions are good and right. Cycle II is a refinement of the actions of cycle I. Various shortcomings were found in cycle I, both in terms of the process of In House Training activities and in terms of results in the form of HOTS questions and their grids. In the second cycle, improvements were made so that it was hoped that at the end of the second cycle the teacher had been able to answer the HOTS questions. After the second cycle ended, the researchers assumed that In House Training activities could be used to improve the teacher's ability in preparing Higher Order Thinking Skills (HOTS).

Cycle I: The teacher's ability in preparing HOTS-based questions

The results of the observations in the first cycle of the 1st meeting showed that the ability of the teachers in compiling HOTS questions obtained observational data from 3 aspects consisting of 15 indicators which were assessed to obtain an average score of 3.15; as for the percentage reached 63.03%. This is when compared with the results of initial observations, it means that there is an increase of 13.03%. Furthermore, in Cycle I for the 2nd meeting regarding the ability of IHT participants in compiling HOTS questions, the average score was 3.58 or based on the percentage reaching 71.58%. With the category "Enough". These results when compared with the results of the first cycle at the 1st meeting there was an increase of 8.55%.

Cycle II: The teacher's ability in preparing HOTS-based questions

The results of the observation of the second cycle of the 1st meeting showed that the teacher's ability in preparing HOTS questions obtained an average value of 4.22 with a percentage amount of 84.30% or in the "Good" category. When compared to the first cycle at the 2nd meeting, there was an increase of 12.72%. Then for the second cycle at meeting 2, it showed that the teacher's ability in preparing HOTS questions obtained an average value of 4.62 or 92.30% in the "Very Good" category. When compared with the results of the second cycle at the 1st meeting, there was an increase of 8.00%. From this explanation, it can be said that the IHT method can improve the ability of teachers in preparing HOTS questions. The results of the research on the teacher's ability to compose HOTS-based questions are presented in **TABLE 2**.

Table 2. Observation Results of Cycles I and II on Teacher's Ability in preparing HOTS-based Questions

No	Aspek	Cycle I				Cycle II			
		1 st meeting		2 nd meeting		1 st meeting		2 nd meeting	
		Average Score	Percent (%)						
A.	Theory	3.03	60.68	3.55	70.91	4.23	84.50	4.66	93.25
B.	Construction	3.30	66.00	3.70	74.00	4.20	84.00	4.58	91.50
C.	Language	3.34	66.88	3.63	72.50	4.22	84.38	4.59	91.88
Amount		3.15	63.03	3.58	71.58	4.22	84.30	4.62	92.30

Cycle I: The ability of resource persons in delivering material

The results of observations on the ability of resource persons in delivering material on IHT activities for two cycles always increased. In the first cycle at the 1st meeting, it showed that the ability of the resource persons in delivering IHT material reached 73.28 with the "Enough" category. Furthermore, at the 2nd meeting, the average ability score was 80.59

with the "Good" category. Based on this, it can be interpreted that the resource person has good ability in conveying the material. The results of observations in the first cycle (1st and 2nd meetings) showed an increase in the ability of the resource persons in delivering the material by 7.31%.

Cycle II: The ability of resource persons in delivering material

Cycle II for the 1st meeting, the resource person delivered material to the participants using the IHT method, obtaining an average ability score of 85.70 or with a percentage of 80.59% in the "Good" category. Then furthermore, for the 2nd meeting, a score of 91.22 was obtained or with a percentage reaching 91.21% in the "Very Good" category. The results of the participants' assessment of the resource persons' ability in delivering material using the IHT method turned out to have increased by 5.51%. These results indicate that the IHT method has a positive effect on the ability of resource persons in delivering HOTS-based question preparation materials. The purpose of In-House Training is to improve the quality of human resources utilized by relevant agencies, so that in the end they can be more supportive in efforts to achieve the goals that have been set. In addition to the above, the objectives of this internal training include: creating interaction between participants within the relevant agencies and strengthening a sense of kinship/togetherness, increasing motivation for both participants and resource persons to familiarize a culture of continuous learning, to explore problems faced in the field related to increasing work effectiveness, so that solutions can be formulated together [11]. **TABLE 3** is the data from the observations of participants' assessments of resource persons during IHT activities in the preparation of HOTS-based questions.

Table 3. Results of Observations in Cycles I and II of Participants' Assessment of Resource Persons in IHT activities

No.	Aspect	Cycle I		Cycle II	
		1 st	2 nd	1 st	2 nd
		meeting	meeting	meeting	meeting
		Average Score	Average Score	Average Score	Average Score
1	Mastery of Materials on the preparation of HOTS-based questions	74.00	82.00	85.13	92.00
2	Punctuality	72.38	80.75	85.13	92.13
3	Systematics Presentation and delivery of material is clearly interesting and easy to understand	71.25	81.25	85.50	92.63
4	Mastery of Methods and Tools for delivering material	74.75	80.75	85.50	89.25
5	Style, Sympathy and Attitude towards Participants	71.25	78.50	85.00	91.88
6	Language Usage	74.75	80.63	85.25	90.63
7	Giving Motivation to IHT participants	72.00	80.75	85.75	89.63
8	Opportunity for Questions and Answers to IHT participants	72.13	80.13	86.00	93.50
9	The suitability of the material with the discussion and purpose of IHT	76.00	80.88	87.00	90.75
10	Appropriateness of the Teacher's Answers to Participants' Questions	74.25	80.25	86.75	89.75
Average number of aspects		73.28	80.59	85.70	91.22

Percentage (%)	73.28	80.59	85.70	91.21
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CONCLUSION

School action research using the In-House Training method with the theme of improving the ability of teachers in preparing HOTS-based questions consists of two cycles, where each cycle has two meetings. The results of the first cycle of research at the 1st meeting obtained an average score of 3.15 with a percentage of 63.03%. When compared to the results of initial observations before the implementation of IHT, there was an increase of 13.03%. Then, in the first cycle for the second meeting, the average value was 3.58 with a percentage of 71.58%. Cycle II for the 1st meeting obtained an average score of 4.22 with a percentage of 84.30%. Cycle II for the second meeting obtained an average observation result of 4.62 with a percentage of 92.30%. The results of the observations when compared with the results of the second cycle of the 1st meeting there was an increase of; 8.00%. Meanwhile, the ability of the resource persons in delivering the material shows that the results of the observation of the first cycle of actions for the 1st meeting show the ability of the resource persons in delivering the material in the second cycle of the 1st meeting, the resource persons obtained an average score of 85.70 with a percentage of 80.59% or "Good" category. Cycle II at the second meeting obtained an average value of 91.22 with a percentage of 91.21%; with the category "Very Good". The results of participant observations on the ability of resource persons in delivering IHT material turned out to have increased by 5.51%. So it can be said that IHT activities can improve the ability of resource persons in delivering material on the preparation of HOTS-based questions.

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