

TEACHER'S STRATEGIES IN DEVELOPING STUDENTS' HIGHER ORDER THINKING SKILLS (HOTS)

Alya Zalsabila¹, Samtidar^{2*}, Nur Aeni³

^{1,2,3} Universitas Negeri Makassar

E-mail: [1alyazalsabila2@gmail.com](mailto:alyazalsabila2@gmail.com), [2samtidar@unm.ac.id](mailto:samtidar@unm.ac.id), [3nur_aeni@unm.ac.id](mailto:nur_aeni@unm.ac.id)

*corresponding author

Abstract

This study aims to find out what strategies are used by teachers in developing students' higher order thinking at SMPN 27 Makassar especially for ninth grade English teachers. This research using descriptive qualitative method. The participants in this study were ninth grade English teachers at SMPN 27 Makassar. Collected data are in-class observation and teacher interviews. The results showed that the 9th grade English teacher used three strategies in developing students' higher order thinking, namely giving open questions to students, using the discussion method in class, and applying the Problem Based Learning model

Keywords—Strategy, Higher Order Thinking Skills (HOTS)

INTRODUCTION

Higher Order Thinking Skills (HOTS) have been implemented in the 2013 curriculum as a form of learning and assessment that achieves quality educational outcomes. (Ariesta, 2018). Higher-order thinking skills are the ability to think at a higher level. Students with HOTS skills are better able to analyze, evaluate, and create creativity to solve problems in their environment. (Retnawati, Djidu, Kartianom, Apino & Anazifah, 2018). Higher-order thinking skills are part of critical, logical, reflective, metacognitive, and creative thinking skills. Students must be able to use Higher Order Thinking Skills (HOTS) to analyze, assess, and create knowledge which is one of the learning objectives. (Ariyana, Bestary & Monhadas, 2018).

Based on Article 6 of the Government Regulation of the Republic of Indonesia Number 4 of 2022 concerning Graduate Competency Standards in Secondary Education Units, it is stated that the Competency Standards for Secondary Education Graduates cover the fields of developing attitudes, knowledge, and skills. (I am here. 2002). This is in accordance with the learning characteristics set by the state that a skill is acquired through activities such as remembering, understanding, applying, analyzing, evaluating, and creating. These characteristics are in accordance with the opinion of Bloom's taxonomy that has been revised (Krathwohl, 2002), which states that indicators to measure higher-order thinking skills are analysis (C4), evaluation (C5), and creation (C6).

HOTS Strategy designed to encourage students to interpret, analyze, and manipulate previous information so as not to be monotonous. Higher-order thinking skills include aspects of critical thinking, creative thinking, and problem solving skills. In the HOTS strategy, students are assessed not only from the results but also from the processing stage. Such a learning process is expected to have a positive impact on the ability to solve mathematical problems optimally. Therefore the

researcher is interested in the research thesis entitled *Teacher's Strategy in Developing Higher Order Thinking Skills (HOTS)*.

LITERATURE REVIEW

1. Teaching Strategy

The teacher's strategy helps students adapt to the new environment and has an impact on the emotional closeness of teachers and students. Teachers can prioritize verbal communication as the main strategy in helping students. If the effort doesn't work or is even said to be a failure, the teacher can use nonverbal strategies. There are 10 strategies that can assist teachers in adjusting student attitudes. The strategy is divided into two types, namely verbal and nonverbal strategies. Verbal strategies that can be done are permission before speaking, personal communication, giving praise and self-evaluation, giving awards, giving tasks done by "opponents", teachers, and independently, and instilling understanding of sharing. Watching students is a nonverbal strategy that teachers can use to adjust students' attitudes. There are five strategies used by teachers in overcoming problems learning English in class. Strategies used by teachers when teaching and learning English in large classes include: Heterogeneous division group, small group strategy, peer tutoring, visual image strategy, translation strategy (Pertwi, Indriastuti, & Mufanti, 2020).

2. Higher Order Thinking Skills (HOTS)

The HOTS concept is a way to develop students' thinking skills creatively and critically. Critical thinking can help students become more innovative and creative (Nugroho, 2018). It will also make learners idealistic and imaginative. When students know how to use both skills it shows that they can think, but some students need encouragement, guidance, and support to use higher levels of thinking. Critical thinking skills must be learned and practiced in learning. Every student has the right to learn and apply thinking skills like any other knowledge. According to (Nugroho, 2018) in his book *Higher Order Thinking Skills (HOTS)* is described as the ability to think to find new challenges. This potential for better organized questions allows new notes or previous information to be used to clarify issues in new situations. The ability to ask questions at a high level is very important in mastery. The ability to think is very important in the learning process, many believe that by mastering potential, mastering speed and mastering efficiency.

3. Teacher's Strategy In Developing Higher Order Thinking Skills (HOTS)

Wrightman said that the role of a teacher is very important in changing a series of interrelated attitudes that are carried out in certain situations and related to the progress of behavior change and student development which is the goal of learning. The teacher's role is very important in changing students to be better at interacting with society. The role of the teacher influences the success of students in understanding learning material. Whether or not a learning process occurs is also a factor in the teacher's strategy in teaching. Therefore, developing higher order thinking (HOTS) in students is inseparable from a teacher's strategy. One learning strategy that supports the development of skills in higher order thinking (HOTS) is a learning strategy that uses Problem Based Learning (PBL).

METHOD

1. Research Design

The type of research used by the researcher is qualitative research using analytical description methods. This research method is used to describe the teacher's strategy in developing HOTS in learning English in the classroom. According to (Silverman, 2020). Analytical descriptive research

is research that attempts to describe symptoms, occurrences, and occurrences occurring in the present moment. In this study, the researcher tries to photograph several events and events which described or described as they are. This study describes the teacher's strategy in developing HOTS in learning English in the classroom. This is done through teacher interviews without any engineering.

2. Research Participants

Research participants are subjects in an experiment or trial who agree to voluntarily participate in a study. Two English teachers at UPT SPF SMPN 27 Makassar is the part in this research participants. The researcher observed them teaching and interview them about the use strategies in developing students higher order thinking skills of learning English. The researcher carried out documentation by recording and taking pictures.

3. Research Instrument

a. Observation Checklist

Observation is used to observe directly the conditions or situations that occur in the process of learning English in the development of HOTS. After that, to find out strategies used and the obstacles experienced by teachers in developing HOTS in learning English in the classroom. This research observation checklist explains accurate data that matches what is happening in the classroom. The observations are made on 6,7,11,13,14, and 20 October 2022 with the schedule.

b. Interview

Interview is one way to collect data is where several questions are asked to the subject verbally and the subject's responses are recorded based on the results obtained (Buriro, Awan, & Lanjwani, 2017). HOTS while learning English in the classroom. Researchers used this tool with middle school English teachers to find out what strategies teachers from SMPN 27 Makassar used to develop their students' higher-order thinking skills (HOTS). So an interview was conducted with her two English teachers in her ninth grade.

c. Documentation

Documentation involves obtaining data directly from the research location, such as relevant publications, laws, activity reports, pictures, video documentaries, and research-related data (Sugiyono, 2018). Photographs of the school being investigated and student activities were taken as part of the investigation. This is to make it easier for the researcher to do documentation.

4. Data Collection

a. Initial/Pre-Field

At this stage the researcher first conducts several stages of preparation. Activities at this stage include preparing a research design, observing the target school, namely SMPN 27 Makassar, selecting informants, preparing instruments research.

b. Implementation/Field

At this stage the researchers tried to prepare themselves to explore and collect data by monitoring conditions, interviewing, and documenting the results to make data analysis regarding the strategies and constraints experienced by teachers in developing HOTS in English learning in the classroom. Then the data is collected and compiled.

c. Final Stage/Processing Data

In the final stage of this study, the researcher carried out several activities, namely reducing the data obtained, displaying the data, analyzing, drawing conclusions and verification, increasing the validity, and narrating the results of the data that had been obtained and collected.

5. Data Analysis

a. Observation

Observation is a research that is carried out systematically using the senses based on the incident that was directly captured or seen at that time or the incident took place (Silverman, 2020). From this we can conclude that observation is a data collection technique performed by observation and involves recording the occurrence and behavior of objects.

b. Interview

An interview is a dialogue between two or more people that takes place between the resource person and the interviewer (Sugiyono, 2018) Interviews conducted with teachers in class. Teachers were surveyed for data on the strategies and barriers they encountered in developing HOTS when learning English with the classroom.et object.

c. Documentation

Documentation involves obtaining data directly from the research location, such as relevant publications, laws, activity reports, pictures, video documentaries, and research-related data (Sugiyono, 2018). Photographs of the school being investigated and student activities were taken as part of the investigation.

RESULT

1. The Teachers' Strategies in the Class A

The following is the implementation of Higher Order Thinking Skills (HOTS) in the learning process of the opening session section by teacher A from the first meeting the researchers observed until the last meeting.

Table 4.1. The Teachers Strategies in the opening session of Class A

Teacher A			
1 st Meeting	2 nd Meeting	3 rd Meeting	4 th Meeting
1. The teacher discusses the material that has not been explained last week and provides opportunities for students to remember	1. The teacher provides opportunities for students to express their opinions regarding the previous	1. The teacher provides opportunities for students to express their opinions regarding the previous	1. Shows the teacher asking students' opinions regarding previously understood material.

the material presented.	learning materials.	learning materials.	
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Based on the table 4.1, the implementation of the HOTS strategy in class A has been done well. The teacher always provides opportunities for students to recall the material in the previous lesson, from these actions the teacher indirectly trains students' memory and understanding. Applications in the opening session were performed by teachers. That is, the teacher's process was shown and an opportunity was provided for students to recall and restate the content of the previous lesson. This is related to his one of 4C skills which is critical thinking. This is demonstrated by students actively expressing their opinions based on what they have understood in previous studies.

Table 4.2. The Teachers Strategies in the core session of Class A

Teacher A			
1 st Meeting	2 nd Meeting	3 rd Meeting	4 th Meeting
1) Shows the teacher in providing opportunities for students to convey their ideas when discussing with their group friends. 2) The teacher provides opportunities for students to exchange ideas and opinions when working in groups.	1) After forming groups, the teacher directs students to discuss with their friends based on the tasks they does 2) During group assignments, the teacher gives students the opportunity to look for other information from the internet,	1) The teacher continues the group discussion at the last meeting, and gives an opportunity for each group to present the results of their group assignment. That is, each group presents how to make based on the recipe they choose. 2) After each group presents the results, then the teacher reflects on the learning they have done at this meeting.	1) 1) Show that each student is active in discussing with their group friends in doing the given task, namely each group member makes a creative self-introduction video 2) The teacher gives the opportunity for students to open the youtube application so that each student watches a tutorial on

	because there are several food recipes they want to know.		how to edit a good self-introduction video.
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Based on table 4.2, class A teachers have implemented the higher order thinking skills strategy very well in the learning. It is proven that teachers apply all 4C skills (critical thinking, collaboration, communication, and creativity). The 4C skills are part of the higher order thinking skills classification. The four skills are also related to the lesson plans used in learning the core activities. The material activities carried out are related to critical thinking skills, namely the teacher gives time to students to convey the ideas and opinions of each student when discussing with their group mates, besides that it is also part of HOTS, namely students presenting the results of group discussions. In making food and drink recipes in each group, apart from that the strategy carried out by teacher A has implemented indicators of high-level thinking.

Table 4.3. The Teachers Strategies in the closing session of Class A

Teacher A			
1 st Meeting	2 nd Meeting	3 rd Meeting	4 th Meeting
1) Shows the teacher informing students regarding the learning that will be carried out at the next meeting.	1) The teacher gives direction to students to prepare food or drink recipes that they will demonstrate with their group. Apart from that, the teacher also provides a little information on the learning materials for the next meeting.	1) The teacher directs students to study at home regarding creative video editing tutorials for further discussion of the material.	1) Informing students to prepare themselves in daily tests related to procedure text material

From table 4.3, we can see that teacher A always provides an evaluation in every meeting. At the end of each lesson, before entering the next material. The teacher gives an evaluation to students regarding the material that has been taught. This relates to students' thinking abilities. In addition, it also proves that this is in line with the higher order thinking skills indicator, namely

Evaluating (C5). The index in measuring higher order thinking skills is analyze (C4), evaluate (C5) and create (C6).(Krathwohl, 2002)

2. The Teachers' Strategies in the Class B

The following is the implementation of Higher Order Thinking Skills (HOTS) in the learning process of the opening session section by teacher B from the first meeting the researchers observed until the last meeting.

Table 4.4.The Teachers Strategies in the Opening Session of Class B

Teacher B			
1 st Meeting	2 nd Meeting	3 rd Meeting	4 th Meeting
1. In this section the teacher does not review the previous material, because there are other agendas at school so there is no opening session activity.	1. Shows the teacher asking students' opinions regarding the previously understood material, that is, asking students to state their opinion about the characteristics of the imperative sentence..	1. The teacher provides opportunities for students to express their opinions regarding the previous learning material and discuss the assignments given last week	1. The teacher invites students to review the previous material, which is related to imperative sentences by training students' higher-order thinking to what extent their understanding of the material is

Based on table 4.4, the opening session by teachers B can be said to be good. In this preparation, the implementation of higher order thinking skills is related to part of the 4C skills, namely critical thinking. It can be seen that at the second meeting until the fourth meeting, the teacher always gives time for students to express their opinions regarding the review of the previous material. Although at the first meeting the teacher did not conduct an opening session due to an urgent matter, but it was undeniable that teacher B always reviewed the material in each meeting for the purpose of training students' thinking power. We can see that at the second and fourth meetings, almost every student expressed his opinion based on what they understood in the previous lesson.

Table 4.5. The Teachers Strategies in the Core Session of Class B

Teacher B			
1 st Meeting	2 nd Meeting	3 rd Meeting	4 th Meeting

<p>1. Based on the groups that have been divided previously, the teacher gives group assignments to students, namely each group will identify several sentences in the English textbook for grade 9 junior high school, namely finding the location of the error in the sentence. From the group assignments, it shows that students are active in discussing with their group friends and exchanging ideas.</p> <p>2. Then, the teacher shows the opportunity for each group representative to present the results of their group assignments and write their respective answers.</p>	<p>1. After forming and dividing group assignments, the teacher directs students to discuss with their group friends and exchange ideas based on the tasks they will do.</p> <p>2. During group assignments, the teacher gives students the opportunity to look for other information.</p>	<p>1. The teacher gives students the opportunity to continue their group discussion at the previous meeting.</p> <p>2. Then each group presents the results of their group assignments, then gives the opportunity to other groups to convey ideas on their opinions.</p>	<p>1. Shows the teacher is directing students to work on group assignments that have been divided into each group. And each group looks active in discussing and exchanging ideas in solving the problems in the picture, namely the direction related to imperative sentence material.</p> <p>2. After the group discussion, the teacher again directs the students for each group .</p>
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Based on table 4.5 regarding the implementation of HOTS, it proves that class B teachers have implemented HOTS in the learning process very well. Class B the teacher has applied the 4C skills and index of higher order thinking (HOTS). In every meeting, the teacher applies critical thinking, namely: the teacher always gives time for students to disclose their opinions and exchange ideas with their group friends about the material being discussed. During the research, there were four meetings collaboration, communication, and creativity. Usually the teacher divides groups to discuss and dialogue related to the material on that day with provide an explanation of how to work and provide feedback to students. Apart from that the teacher always gives time for students to make group presentations and discuss with other groups. From the observations that the researchers have made during four meetings, it explains that teacher B has implemented a learning strategy in higher order thinking skills in accordance with the indicators in measuring students' higher order thinking skills abilities.

Table 4.6. Teachers Strategies in the Closing Session of Class B

Teacher B			
1 st Meeting	2 nd Meeting	3 rd Meeting	4 th Meeting
1. Shows the teacher informing students regarding the learning that will be carried out at the next meeting, namely directing students to do independent assignments in the English language package book for grade 9 junior high school.	1. Informing students to prepare one of the group member representatives to present the results of each group's assignments	1. The teacher gives direction to students to understand how to use imperative sentences at home by looking for references on google	1. The teacher informs students to study the next material, which is about report text, and directs each individual to look for examples of report texts.

From table 4.6, it can be seen that the teacher gives a good assessment of HOTS to students. In four meetings the teacher always provides evaluations and reflections on the lessons that have been learned. Other than it shows that teacher B always informs the next material to students. It is intended that students learn the subject matter at home. Teacher B provides excellent activities in train students' thinking, where the teacher gives group discussion tasks to solve or answer the questions given, such as analyzing several sentences and looking for errors in each imperative sentence. In conclusion, teacher A and teacher B do not have much difference regarding higher order thinking skills implementation strategy in the learning English in their respective classes. In the opening session, teachers A and B have similarities in that each meeting carries out a review of the previous material to students and provides opportunities for students to express their opinions on what is understood while the difference is in the core session, where teacher A is more dominant in directing each member of the active group. In presenting group results, while the teacher B rarely involves all group members in the presentation session, only representatives from each group. Thus, more communication occurs in class A rather than class B in terms of the core session portion. At the closing session, there is no difference between the two teachers because they have implemented higher order thinking very well.

DISCUSSION

1. Give open-ended questions to students

By giving open-ended questions to students, which means questions that are rational in nature will trigger students' high-level thinking about the questions given. Based on research conducted by researchers from observations and teacher interview results when using open-ended questioning strategies, this is consistent with research conducted by (Sahril, et al., 2022). Explains that effective questioning requires students. It requires not only memorization, but also higher-level thinking: analysis, evaluation, reasoning, comparison, generalization, connection, application and

explanation. A question is a question that is more effective in interrogative language. Instead of asking what and where, why and how.

2. Using the discussion method in the classroom

By using the group discussion methods can educate students higher order thinking skills. This can happen because students are required to ask each other questions, actively listen to the opinions of group mates, and negotiate ways to solve the problem. This learning method not only trains students' thinking skills, but also increases student activity in class and increases learning motivation. From the observations by researchers, it was clear that teachers used discussion to form students in carrying out text procedures with their group friends. After the student completes the teacher's assignment, the student must present their work individually.

3. Applying the Problem Based Learning model

The implementation of problem-based learning models is used by teachers in developing students' higher-level thinking, this is evidenced by the implementation of methods in learning activities that can help students train to solve various problems in the future to solve them on their own or together. The problem based learning is also known as the brainstorming method, because it is a method that stimulates and uses insight without looking at the quality of the opinions conveyed by students. The teacher's strategy that the researcher found was that the teacher used a strategy in developing students' higher order thinking by applying a PBL model, namely where the results of these findings show that the teacher used a learning strategy with several syntax PBL models, starting from the teacher introducing students to problems. Encouraging students to give opinions, as well as analyzing and evaluating the PBL process. The results of the researchers' findings are in line with the Syntax of the Problem-based Learning model according to (Arends, 2012).

CONCLUSIONS

The teachers strategy in develop HOTS of ninth grade students in learning English, namely giving open questions to students, using the discussion method in class, and applying the PBL model. In the strategy for developing higher order thinking skills carried out by teachers in learning English, indicators that measure higher order thinking skills are also included, namely analyze (C4), evaluate (C5) and create/(C6). The results achieved in developing students' HOTS (Higher Order Thinking Skills), namely optimizing student activity and achievement, being able to form a social spirit, learning activities in the classroom become more effective, forming student self-confidence, varied teacher strategies in learning, and realizing learning goals.

REFERENCES

- Arends, R. I. (2012). *Learning to teach*. New York: McGraw-Hill Companies.
- Ariesta, F. w. (2018, November 23). *Binus*. Retrieved from Mengintegrasikan Higher Order Thinking Skills (HOTS) pada pembelajaran sains di Sekolah Dasar: <https://pgsd.binus.ac.id/2018/11/23/mengintegrasikan-higher-order-of-thinking-skill-hots-pada-pembelajaran-sains-di-sd/>
- Ariyana, Bestary, & Monhadas. (2018). *Buku pegangan pembelajaran pada keterampilan belajar tingkat tinggi*. Jakarta: Direktorat Jenderal Guru dan Tenaga Kependidikan Kementerian Pendidikan dan Kebudayaan.

- Ariyana, Yoki; Pundjiastuti, Ari; Bestary, Reisky; , Zamroni;. (2018). *Buku Pegangan Pembelajaran Berorientasi Pada Keterampilan Berpikir Tingkat Tinggi*. Jakarta: Direktorat jendral guru dan tenaga kependidikan.
- Buriro, A. G., Awan, J. H., & Lanjwani, A. R. (2017). Interview: A Research Instrument For Social Science Researchers. *International Journal of Social Sciences, Humanities, and Education*, *I*(4), 1-14.
- Indonesia, P. R. (2002). Peraturan Pemerintah Republik Indonesia tentang Standar Nasional Pendidikan.
- Krathwohl, D. R. (2002). A Revision of Bloom's Taxonomy : An overview. *Theory into practice*, *41*(4), 212-218.
- Nugroho, R. (2018). *HOTS (Kemampuan Berpikir Tingkat Tinggi: Konsep, Pembelajaran, Penilaian, dan Soal-soal)*. Jakarta: PT Gramedia Widiasarana Indonesia.
- Pertiwi, W. I., Indriastuti, N. R., & Mufanti, R. (2020). Teacher Difficulties and Strategies In Managing a Large Class In Teaching and Learning English . *Jurnal Edupedia*, 150-154.
- Retnawati, H., Djidu, H., Kartianom, Apino, E., & Anazifah, R. D. (2018). Teachers' Knowledge About Higher Order Thinking Skills and Its Learning Strategy. *Problem of Education in The 21st Century*, *76*(2), 215-230.
- Sahril, Sofyan, R. R., Najamuddin, A. A., Wirawati, N., Anwar, N. S., Bulkis, I., & Zalsabila, A. (2022). Penerapan 4C dalam mengembangkan Higher Order Thinking Skills (HOTS) pada siswa kelas VII di SMPN 27 Makassar. *INSIGHT (Indonesian Journal of Social Studies and Humanities)*, 85-93.
- Sugiyono. (2018). *Metode Penelitian Evaluasi*. Bandung: Alfabeta.
- Sulistiyowati, L. (2020, 12 02). *Metode Critical Thinking Dalam Pembelajaran Teks*. Retrieved from radar semarang: <https://radarsemarang.jawapos.com/artikel/untukmu-guruku/2020/12/02/metode-critical-thinking-dalam-pembelajaran-teks-tanggapan-kritis/>
- Supriyatno, T., Susilawati, S., & Hassan, A. (2020). E-learning development in improving students' critical thinking . *Cypriot Journal of Educational Science*, 1099-1106.
- Suyono, H. (2014). *Belajar dan Pembelajaran*. Bandung: Remaja Rosdakarya Offset.
- Uno, H. (2014). Model Pembelajaran. In M. P. Efektif. Jakarta: Bumi Aksara.
- Yeung, S.-y. S. (2016). Conception of teaching higher order thinking: perspectives of Chinese teachers in Hong Kong. *The Curriculum Journal*, 553-578.