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Implementation of Higher Order Thinking Skills (HOTs) in Teaching Malay Language Writing Skills among Preschool Teachers

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Abstract: In the Malaysian Education Development Plan (PPPM 2013-2025), one of the aspects that is the focus is the implementation of Higher Order Thinking Skills in teaching and learning in schools. In this regard, teachers need to apply HOTs in teaching in order to train and improve students' thinking skills creatively and critically. In addition, in teaching Malay writing skills, teachers need to be more creative in determining HOTs-based teaching methods as writing skills are the most difficult skills to master compared to other skills. Therefore, HOTs are important to be applied in the teaching of writing skills starting from the early stages of education in preschool in order to train preschoolers to think high level and be cultured with HOTs. Hence, preschool teachers need to master the knowledge on the implementation of HOTs so that the teaching process are of excellent quality and can stimulate the thinking of the students to the highest level of HOTs. Thus, this concept paper will discuss the problem of the implementation of HOTs in Malay language writing skills, the importance of teachers applying HOTs in teaching and learning by detailing the planning and implementation of HOTs in pedagogy as well as parsing the teaching and learning strategies of HOTs.

Keywords: Higher order thinking skills, Preschool teachers, Teaching and learning, Writing skills, National preschool standard curriculum.

Introduction

One of the government's efforts in ensuring that the education system today is comparable to that of developed countries, the Ministry of Education (MOE) has introduced the Education Development Plan (PPPM 2013-2025). In this PPPM (2013-2025) programmed, various goals need to be achieved to ensure that teachers and pupils are at the maximum level of quality. One of the MOE's aspirations in PPPM 2013-2025 is to inculcate HOTs where teachers are expected to apply HOTs to the maximum extent possible in teaching and learning in the classroom. Thus, Malay language education is no exception in realizing the MOE's aspiration. In addition, Malay Language is a core subject that must be mastered by all students from preschool education to secondary school level.

In the National Preschool Standard Curriculum (KSPK revision 2017), Malay writing skills are one of the important skills organized in the communication pillars of language skills besides listening and speaking skills and reading skills. There are content standards, learning standards and performance standards that preschoolers need to master. Among the points highlighted is the HOTs which is explicitly stated in the writing of learning

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standards where preschool teachers need to elaborate learning standards in teaching and learning in the classroom with emphasis on HOTs (BPK KPM, 2016). The MOE's aspiration in PPPM (2013-2025) is in line with KSPK's goal which aims to develop the potential of students aged four to six years as a whole and integrated in physical, emotional, spiritual, intellectual, and social aspects through a safe and nurturing learning environment as well as fun, creative and meaningful learning activities. This is to enhance their skills, instill confidence and develop a positive self-concept in the students so that they are ready for the challenges and follow the next learning (BPK, MOE 2016). Thus, HOTs serves as an important element that preschool teachers need to apply in teaching Malay language writing skills to foster a culture of critical, creative and innovative thinking as early as preschool education.

In the implementation of Malay Language education teaching in pre-school, these writing skills include mechanical and mentalist writing skills. Children need to be exposed to mechanical and mentalist writing skills in a balanced and integrated manner at the preschool education level. Mechanical writing skills begin at the early education stage which involves a lot of fine motor skills activities (Ummu Afifah et al, 2021), whereas mentalist writing skills involve children's thoughts or opinions that emphasize the meaning of the writing produced by them (Tompkins & Jones, 2019). In this regard, the main focus of the discussion is on the mentalist writing skills which is, the teacher needs to train the thinking skills of pupils from the early stages of education in preschool. In this regard, this is very closely related to HOTS. In teaching Malay Language writing skills, preschool teachers need to apply the HOTS element during the teaching and learning process in the preschool classroom. HOTS are emphasized in teaching and learning so that teachers can stimulate structured and focused thinking among students. HOTS descriptions are focused on four levels of thinking such as table 1 (BPK KPM, 2016).

Table 1. Thinking levels (Moe, 2014)

Stages of thinking	Descriptions
Applying	Using knowledge, skills, and values in different situations to implement things
Analyzing	Evaluate information into small parts to understand more deeply and link between the sections
Evaluating	Make considerations and decisions using knowledge, experience, proficiency, and value and justify
Creating	Produce creative and innovative ideas or products or methods

Literature Review

Thinking Skills

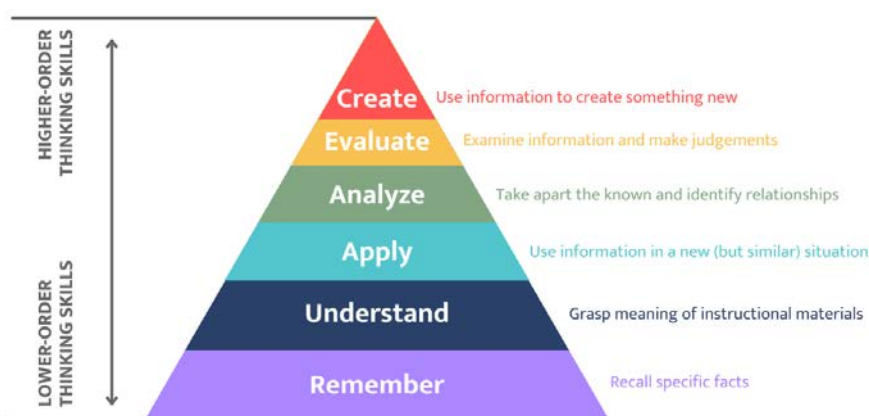


Figure 1. Levels of thinking

Levels of Thinking Skills

Based on Bloom's theory (The Anderson Review 2001), thinking skills have different levels ranging from the level of the simplest thinking ability to the most critical. There are 6 levels (Figure 1) in the Anderson review

hierarchy adopted in the Curriculum and Assessment Standards Documents (DSKP) to be used as guidance by teachers. Each level has specific indicators of skills with the characteristics of abilities and mastery of thinking skills in accordance with the appropriateness of the development of the pupil's self-potential. There are two main levels of thinking skills which are lower-order thinking skills (LOTS) and higher-order thinking skills (HOTS). The figure below shows the levels of thinking skills and a description of the characteristics of thinking abilities and mastery for each level.

Higher- Order Thinking Skills (HOTS)

HOTs are defined as the ability to apply knowledge, skills, and values in making reasoning and reflection to solve problems, make decisions, innovate and be able to create things (MOE, 2013). HOTs can be identified in Content Standards (SK) and Learning Standards (SP) through thought-level verb statements in Anderson's revision Bloom Taxonomy such as Figure 2. Based on the definition of HOTs in Figure 2, HOTs refers to the skills of applying, analyzing, evaluating and creating. In the context of this study, this skill was identified as the level of thinking that is the focus in the determination of the Content Standards (SK) and Standards of Learning (SP) for Malay Language subjects in the writing skills of preschoolers that need to be applied by the teacher in the classroom to ensure that preschoolers master the HOTs skills.

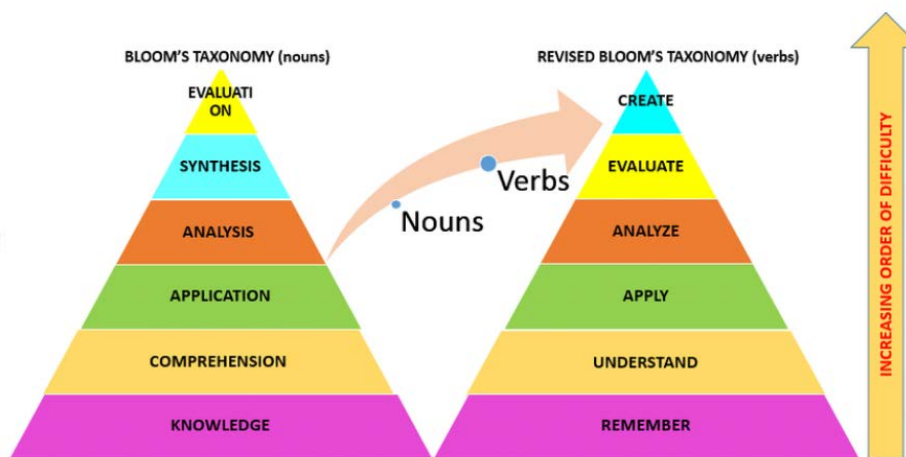


Figure 2. Thinking level hierarchy (Moe, 2014)

HOTs are the highest level in the cognitive process hierarchy. HOTs occurs when a person gets new information, stores in memory and organizes, associates with existing knowledge and generates information to achieve a purpose or solve complex situations. Therefore, HOTs are very important to everyone as HOTs can challenge someone to perform, analyze and manipulate information (Widad et al, 2011). Therefore, we can look from various perspectives to solve problems in certain situations especially high-level critical problems. (Mokhtar, 2017).

HOTs is explicitly stated in the curriculum so that teachers can translate in teaching and learning to stimulate structured and focused thinking among students. HOTS description focuses on four levels of thinking which are the skills of applying, analyzing, evaluating and creating. This skill is identified as the level of thinking that is the focus in the determination of the Content Standard (SK) and The Standard of Learning (SP) for the subjects taught in schools to ensure that students master the HOTs as envisaged by the MOE. At the level of applying, it requires students to use knowledge, skills, and values in different situations to do something. In this context, students are able to solve problems by applying concepts that they understand through teaching and learning activities. Among the verbs related to the level of applying thinking are drawing, pointing the way, adopting, using, pointing, solving, classifying, drawing, implementing, checking, sketching, complementing, adapting, building, and predicting (BPK KPM, 2014).

At the analysis level, students are able to map the information into small parts to understand more deeply and connect the links between the sections. In this context, students are able to interpret the roles and functions of each small part to understand a whole concept. Among the verbs related to the level of analytical thinking are identifying, categorizing, examining, separating, conducting experiments, screening, explaining, displaying,

predicting, analyzing, explaining, detecting, examining, testing, comparing, evaluating, distinguishing, and investigating (BPK KPM, 2014).

Next, the level of evaluate thinking can be realized when the pupil makes judgments and decisions using knowledge, skills and values and gives justification. Among the verbs related to the level of evaluation thinking are evaluating, choosing, considering, prioritizing, defining, discussing, confirming, defending, proposing, discussing, evaluating, supporting, concluding, using, assessing, reasoning, and making decisions (BPK KPM, 2014).

The level of create thinking is the highest level of HOTS which is pupils come up with creative and innovative ideas or products or methods. Among the verbs related to the level of thinking of creating are planning, developing, generating, installing, reorganizing, predicting, creating, preparing, constructing, formulating, designing, combining, proposing, and composing, (BPK KPM, 2014).

However, in the context of teaching and learning in preschool specifically in writing skills, preschool teachers are limited in determining the level of HOTS based on the learning standards contained in the 2017 revision KSPK. This is because, learning standards preschool Malay writing skills do not all characterize HOTS verbs. However, it does not prevent preschool teachers from applying the HOTS element in teaching and learning writing skills. Preschool teachers need to be creative in diversifying teaching techniques because if they clearly understood about the implementation of HOTS, it is a form of application that HOTS can be applied according to the appropriate level of the pupil's thinking and the main factor is that the teacher needs to understand and be creative in diversifying the teaching strategy starting from the preparation before teaching which involves the work of selecting learning standards and content standards determining the teaching aids that correspond to the level of learning standards that has been chosen, set up questions based on HOTS and determine the type of assessment that challenges the students' minds. At the implementation stage, teachers need to carry out learning activities in the classroom in a manner of delivery that can generate students' ideas, and always actively involve students in teaching and learning activities. At the assessment level, the teacher needs to prepare written questions that challenge the student's mind according to the level of suitability of the pupil.

HOTS also needs to be understood as the ability to apply knowledge, skills and values in making reasoning and reflection to solve problems, make decisions, innovate and be able to create things. HOTS includes critical thinking, creative and reasoning skills and thinking strategies. Critical thinking skills are the ability to evaluate an idea logically and rationally to make reasonable judgments using reasonable reasoning and evidence. Creative thinking skills, on the other hand, are the ability to produce or create something new and valuable by using original imagination and thinking not according to the prevalence, meantime, when reasoning skills are the ability of the individual to make judgments and judgments logically and rationally. Finally, thinking strategies are a structured and focused way of thinking to solve problems (BPK KPM 2013).

HOTS can be applied in the classroom through activities in the form of reasoning, inquiry learning, problem solving and projects. Teachers and pupils need to use thinking tools such as thought maps and mind maps as well as high-level questioning to encourage pupils to think (BPK KPM, 2014).

Thus, the teacher's understanding of the meaning of HOTS as well as the use of verbs in the level of thinking found in the curriculum document enables the teacher to prepare the appropriate teaching and learning content and work out the content of the subjects that meet HOTS. Teachers need to be able to elaborate curriculum documents by identifying the appropriate use of HOTS verbs according to the subjects taught and being able to apply them in the form of teaching and learning activities that challenge the mind and stimulate the learning of students.

The Implementation of Higher-Order Thinking Skills in Malay Language Writing Skills

Writing skills is one of the important skills in learning the Malay language that is emphasized in the education curriculum in Malaysia (Norfaizah et al, 2015). This is because the writing skill process is the highest and complex language skill to be mastered in the Malay language subjects. Writing skills are also more challenging to teach pupils as most pupils are unable to fully master writing skills. This situation is due to the need for the writing skills themselves which requires an individual to think before, during and after the writing process is implemented. (Marzni et al, 2018).

According to (Olness, 2005), the teaching of writing skills is a structured condition in which children are guided through the correct writing steps. Teachers have a complex task in creating a learning environment that provides exploratory opportunities during writing learning (Mack, 2012). In teaching and learning Malay Language, writing skills are one of the skills that all students need to master from primary to secondary school level (Hijrah et al, 2019). Therefore, teachers need to have the best teaching methods and strategies to ensure the effectiveness of teaching during teaching and learning writing skills in the classroom. Teaching writing skills needs to involve students more in writing activities and not just teacher centered.

However, the teaching methods of writing in schools are more conventional in nature and discourage the creativity of pupils today. Therefore, bilateral interaction and active learning that contribute to creative thinking cannot occur in the classroom (Azieyana & Christina 2018). Accordingly, pupils often have trouble sparking and generating ideas in writing. Lack of ideas is a common problem for students when they start writing which affects the quality of the writing produced (Dian et al, 2018).

Therefore, teachers play an important role in planning the teaching and learning process with the aim of providing knowledge input to students as well as providing meaningful experiences to students. This is highly dependent on the ability of teachers to use the variety of teaching methods and approaches to convey knowledge to students to maintain their attention in the classroom (Marzni et al, 2018). Therefore, writing skills are very closely related to thinking skills. According to (Ahmad Fikri & Zamri 2019), the lack of students in mastering thinking skills will make them weak in writing. If writing skills do not improve, the ability of pupils to express their thoughts or ideas through written form will decrease or not develop (Hamzah et al, 2018).

In this regard, the implementation of HOTs in teaching and learning writing skills is very important to attract interest as well as to be able to improve pupils' thinking skills through activities that can promote pupils' thinking skills. Through the planning and implementation of such activities, guidance from teachers is essential so that thinking practices can be enhanced in teaching and learning writing skills (Nur Shahirah & Zamri Mahamod, 2021). Malay language teachers need to have knowledge and mastery of HOTs as the thinking skills can influence the teachers' perception of the effectiveness of teaching and learning in the 21st century (Shahirah & Mahamod, 2021).

In the context of preschool, HOTs should be applied through the planning and implementation of teaching and learning effectively. Planned activities should provide a nourishing and enjoyable experience, actively and safely engaging pupils. Teachers are encouraged to use creativity to select, organize, process and diversify activities based on the Learning Standards so that activities in the form of reasoning, inquiry learning, problem solving, and projects can be applied (BPK, MOE 2016).

However, a researched by (Zaidon & Ayob, 2013) in preschool classes showed that teachers are less emphasized on the aspects of the writing process to students, but rather on the mechanical aspect of writing. This statement is also supported by (Graves & Stuart, 1985) and (Mahzan Arshad, 2012) which is that the writing training in schools emphasizes the structure of the language that does not mean anything to children other than not being interested in them. Preschool teachers lack writing activities that require children to generate their own ideas or write for the purpose of communicating (Siti Iwana Sharizah Abu Samahet al, 2013). Past studies have also shown that preschool teachers regularly use copying, training, and questioning activities as the main activity in writing teaching strategies. This proves that preschool teachers do not have a special approach in teaching writing. This situation can create an imbalance in language literacy at the preschool level. The thinking of preschoolers will be more aroused if the teacher is well versed in diversifying teaching methods especially in writing skills (Sharizah et al, 2014).

Therefore, preschool teachers need to master their knowledge in applying HOTs to preschoolers especially in the ability to write Malay Language by mastering knowledge in planning and implementing to ensure that HOTs teaching and learning strategies are implemented effectively.

Implementation of HOTs Based on Ministry of Education (MOE) Guidance.

Planning and Implementation of HOTs in Pedagogy

An effective HOTs teaching and learning approach needs to be pupil-centered by actively engaging them in teaching and learning through thought-challenging assignments and questions. Therefore, teachers need to create a conducive classroom environment to stimulate students to think. Teachers can also use thinking tools

and questioning techniques to inculcate critical and creative thinking among students. Pedagogy involving thinking students has long been implemented, through programme such as Critical and Creative Thinking Skills (KBKK) implemented in schools in 1994. This programme is continued and strengthened with the introduction of HOTS as recommended in PPPM (2013-2025). The knowledge, skills, values, and attitudes that an individual has play an important role in the process of thinking. All these aspects become the background for reasoning and reflection so that it allows an individual to think a higher level in the context of being able to make decisions, solve problems, innovate, and create. In this process, four high levels of thinking are given focus which is to apply, analyze, evaluate, and create (BPK KPM, 2014).

Therefore, in order to implement HOTS in teaching and learning process, teachers need to do research by referring to the standard of learning stated in the Curriculum and Assessment Standard Document (DSKP). The standard of learning is a statement of what students should know and can do. If the statement refers to the level of HOTS, the teacher needs to perform actions such as referring to the learning standards and identifying the appropriate elements of HOTS to be applied (BPK KPM, 2014). If the verb in learning standards does not characterize HOTS, teachers are encouraged to diversify the content of the lesson by applying HOTS in any part throughout the teaching and learning process. For example, in preschool writing skills, learning standards for BM 3.2.5 is copying simple sentences. If viewed this learning standards does not characterize the element of HOTS that a preschool teacher needs to apply in principle. However, the preschool teacher can insert HOTS during the induction set activities and during the teaching activities including the method of questioning by unearthing the idea of the pupil before the simple sentence copying activity is carried out at the end of the learning.

After the teacher has finished determining the learning standards, teacher needs to plan a teaching and learning by providing a Daily Lesson Plan (RPH) and Learning Aids (BBB). Teachers need to state the objectives of learning explicitly and provide activities that allow students to use HOTS. Teachers also need to provide BBB that can promote student HOTS (BPK KPM, 2014).

At the implementation of teaching and learning stage, teachers need to use appropriate thinking tools with the pupil level by asking questions that can encourage students' HOTS as well as creating a classroom environment that helps students to use HOTS (BPK KPM, 2014). Assessment activities conducted at the end of teaching and learning process should provide questions about HOTS to challenge the students' thinking. In the closing part of teaching and learning, teachers also need to reflect on the effectiveness of teaching and learning in promoting students' HOTS (BPK KPM, 2014).

HOTS Teaching and Learning Strategies

Teachers need to plan and implement HOTS through various teaching and learning strategies that are effective and in line with the objectives of teaching and learning. The teaching and learning strategies that can be used are constructivism, contextualized learning, project-based learning, inquiry, and future studies. The right strategy will help create a classroom environment that allows the pupil to think.

Constructivism is an understanding that pupils actively build their own knowledge or concepts based on existing knowledge and experience. Teachers need to ask high-level questions so that pupils can think and use the knowledge received with existing knowledge to build new knowledge. The teacher should encourage pupils to look for answers on their own.

Contextual learning is a method of learning that combines content with the daily experience of the individual, society, and the realm of work. This method provides concrete learning that involves hands-on and mind-on activities. In this strategy the pupil is able to apply the existing knowledge in different situations.

Project-based learning is a method of mastering knowledge, skills and values through learning experiences based on the assignment of long-term activities between disciplines, student-centered and integrating current issues and practices. This method emphasizes intellectual tasks to explore complex issues. This method promotes the understanding of pupils in which pupils can explore in search of information, make interpretations, make decisions or conclusions.

Inquiry-based learning is an approach to finding answers to the questions raised. It involves investigating, exploring, collecting data, drawing conclusions to solve problems, making reflections on the methods used and communicating to share findings about the problem.

Future studies that create awareness and stimulate pupils to think about the issues, problems and opportunities that will be faced. This will enable them to look to the future with confidence and optimism such as making predictions about *trends* and changes that will occur based on existing knowledge and information, anticipating the impact or consequences of a phenomenon, *trend*, or future change, and using various resources to control, address and handle changes in order to be of maximum benefit (BPK KPM, 2014).

However, in the context of preschool, there are some additions of special approaches specified in the 2017 revision KSPK. This approach to the teaching and learning strategy is compatible with the age of preschoolers. It includes pupil-centered learning, learning through play, inquiry-based learning, integrated approach, themed approach, project-based learning, master's learning, contextual learning, and learning based on diversity of intelligence.

Pupil-centered learning means the active involvement of pupils in a learning activity and they are given responsibility for their own learning. Under this pupil-centered learning, pupils play an important role in the learning process as learning is driven on the interests, impulses and needs of the pupils. Pupils are also given the freedom to choose the type of activity, material, and time during learning. Teachers are facilitators or mentors who guide students to carry out learning activities.

Learning through play is a well-planned and structured approach to give students the opportunity to learn in a free, safe, joyful, and meaningful environment. This approach is emphasized in preschool education as play is the nature or natural behavior of the child. Through the process of playing, they will make exploration, discovery, and construction of the experience directly and naturally. Through this approach, the physical, social, cognitive and language development aspects as well as the child's potential can be increased to the maximum level.

A blended approach is an approach that combines two or more skills that students need to master at one time. This approach will be able to help students to understand the nature of real life. In real life things are interconnected between each other rather than something separate. Apart from that, teachers should use students' daily experiences in the teaching and learning process. Learning is carried out in a comprehensive and integrated manner and does not separate learning into different disciplines. Apart from the integration between disciplines, this approach also involves the integration between several skills, skills and values, the integration between supports, the integration between activities as well as various methods and techniques. Learning through a blended approach can meet the needs of students who differ in terms of development, interests and abilities as well as differences in terms of background.

The themed approach is the management of curriculum and learning through one theme or topic chosen in accordance with the time, place, interests, background, and stage of development of students. The themed teaching approach involves matters such as, the use of one common theme in the field of learning, the selection of themes based on the suitability of the student stage, certain situations, or current events, interrelated with existing experiences and new experiences obtained in a structured and systematic manner. The theme approach is the extension and validation of knowledge and competence and ranking from easy to difficult and from general to more specific.

Master's learning is an approach to ensure that all students master the desired learning objectives in a learning before moving on to the next learning. In other words, this approach focuses on the student's mastery of the matter being learned. Through Master's Learning, students are given the opportunity to progress according to their own learning abilities and rates as well as to enhance their level of learning mastery. This approach adheres to the principle that every pupil is able to learn if given the opportunity. This approach requires adequate time allocation as well as a quality teaching and learning process.

Thinking Tools

The use of thinking tools can help students think more organized, systematically, and focused. Examples of thinking tools are such as thinking maps, graph compilers, questions, and highlighting, mind maps, *CoRT* and 6 Thinking Hats.

Discussion

The National Preschool Standard Curriculum (KSPK revision 2017) has clearly emphasized KBAT in preschool education. However, past studies have found that some teachers including preschool teachers are still unclear in implementing HOTs especially in Malay writing skills. Activities carried out in the teaching of writing skills were found to be less encouraging to pupils' thinking skills. This is because the teacher is not clear in implementing it from planning the teaching and learning strategies based on HOTs.

In this regard, in order to achieve the implementation of HOTs in the Malaysian education system, MOE has provided reference materials as a guide to make it easier for teachers to refer before implementing HOTs in the classroom. This reference material has explained in detail how teachers can apply HOTs in teaching and learning activities ranging from the planning and implementation of HOTs in pedagogy to the teaching and learning strategies of HOTs. The description of the importance of the implementation of HOTs and the clearly described HOTs theory can also help teachers in understanding and fully appreciating the goals of HOTs by MOE so that teachers can apply the elements of HOTs in teaching and learning at the maximum level. Therefore, teachers need to take the opportunities of the reference materials provided by MOE to understand more clearly how to apply HOTs in teaching and learning more effectively.

Conclusion

Through the program in PPPM (2013-2025) implemented by MOE, preschool teachers should immediately prepare themselves with all new knowledge, especially ideas about the implementation of HOTs recommended by MOE. Preschool teachers should be aware of the current development of the world of education and constantly update themselves with each of the latest knowledge materials. The result of the efforts of preschool teachers in realizing the MOE's aspiration through PPPM (2013-2025) to implement HOTs in teaching and learning Malay Language writing skills in preschool, it is hoped that it will produce students who are able to think creatively and critically for the initial preparation of education. When HOTs is cultured from the early stages of education, it can indirectly produce high-minded and quality scientific groups who are able to raise an issue well for scientific activities, sort ideas and choose the appropriate words according to the needs at any time in the future.

Scientific Ethics Declaration

The authors declare that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the authors.

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