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ANALYTICAL STUDY OF TEACHERS' UNDERSTANDING OF HOTS IMPLEMENTATION IN PRESCHOOL LEARNING PLANNING

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Abstrak

Implementasi HOTS (*Higher Order Thinking Skill*) merupakan pondasi dalam mengembangkan keterampilan berpikir kritis pada anak usia dini. Penelitian ini bertujuan untuk menganalisis implementasi HOTS dalam penyusunan perencanaan pembelajaran PAUD. Penelitian ini menggunakan metode deskriptif kuantitatif dengan melibatkan 31 responden guru PAUD di Jawa Barat yang dipilih dengan teknik *random sampling*. Teknik pengumpulan data menggunakan kuisioner yang berisi tiga indikator tingkat pemahaman guru PAUD terhadap implementasi HOTS. Teknik analisis data pengukuran pemusatan data dengan mengukur niai rata-rata (*mean*). Hasil penelitian menunjukkan bahwa sebagian besar guru sudah pernah mendengar HOTS namun belum dapat menjelaskan konsep HOTS dengan utuh, guru belum dapat membedakan dengan tepat antara konsep HOTS dengan perkembangan kognitif, kesadaran implementasi HOTS pada perangkat pembelajaran PAUD sudah dimiliki oleh guru dan beberapa sudah menerapkannya terlihat dari KKO (Kata Kerja Operasional) dan output kegiatan pembelajaran yang telah disebutkan. Pemahaman guru PAUD terhadap implementasi HOTS harus terus ditingkatkan sehingga dapat menghasilkan perencanaan pembelajaran sesuai dengan tuntutan pembelajaran abad 21.

Kata Kunci: *Guru, HOTS, PAUD, Perencanaan Pembelajaran*

Abstract

The implementation of HOTS (Higher Order Thinking Skill) is the foundation for developing critical thinking skills in early childhood. This study aims to analyze the implementation of HOTS in the preparation of ECE learning plans. This study uses a quantitative descriptive method involving 31 ECE teacher respondents in West Java who were selected using a random sampling technique. The data collection technique used a questionnaire containing three indicators of the level of ECE teachers' understanding of HOTS implementation. The data analysis technique measures the centralization of data by measuring the mean. The results of the study indicate that most teachers have heard of HOTS but have not been able to fully explain the HOTS concept, teachers have not been able to differentiate precisely between the HOTS concept and cognitive development, awareness of HOTS implementation in ECE learning devices is already possessed by teachers and some have implemented it as seen from the OAVs (Operational Action Verbs) and the output of learning activities mentioned. ECE teachers' understanding of HOTS implementation must continue to be improved so that they can produce learning plans in accordance with the demands of 21st-century learning.

Keywords: *Teachers,HOTS, ECE,Lesson Plan*

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A. INTRODUCTION

The demands of 21st-century learning aim, among other things, to produce quality human beings need four elements: 1) Critical Thinking and Problem Solving, 2) Communication Skills, 3) Collaboration Skills, and 4) Creativity Skills and Innovation. Achieving 21st-century competencies requires the collaborative role of educators to achieve these goals. The Indonesian government has anticipated 21st-century learning by implementing the 2013 curriculum with a scientific approach.[1] Mastery of the 4C skills is not only a requirement but a necessity for every school to develop skilled students in the 21st century.[2]

One effort that can be applied to achieve quality education is the implementation of HOTS (Higher Order Thinking Skills). The successful application of these skills can be seen in students' ability to explore, make decisions, and produce valid performance results and products within the context of experiential learning that encourages the development of higher-order thinking skills in line with intellectual abilities. HOTS is also referred to as complex skills because it encompasses logic and reasoning, analysis, evaluation, creation, problem-solving, and judgment.[3]

HOTS is the highest cognitive level of Bloom's taxonomy: analyzing (C4), evaluating (C5), and creating (C6). This taxonomy was revised by adding dimensions of cognitive processes, including remembering, understanding, applying, analyzing, evaluating, and creating.[4]

[1] Helly Apriyanti, "Pemahaman Guru Pendidikan Anak Usia Dini terhadap Perencanaan Pembelajaran Tematik," *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini* 1, no. 2 (2017), p. 111.
[2] Robi Agape Barus, "4C Skills of the 21st Century: Their Nature and Importance in Primary School Learning," *Multidisciplinary Indonesian Center Journal (MICJO)* 1, no. 2 (2024), p. 689.
[3] Susan M. Brookhart, *How to Assess Higher-Order Thinking Skills in Your Classroom* (Alexandria, VA: ASCD, 2010), p. 159.
[4] Yosi Laila Rahmi, Ariska Triana Dewi, and Rahmawati Darussyamsu, 'The

It is highly recommended that HOTS be implemented at the early childhood level where 80% of human brain development occurs. This, of course, encompasses abilities far beyond memorization. Therefore, HOTS is an important model that must be implemented in the national education system, as it promotes continuous learning and provides various benefits for the nation's future.[5] One positive impact of HOTS is maximizing performance and reducing weaknesses. In other words, trained students will be influenced by the speed and efficiency of decision-making.[6]

The implementation of HOTS in early childhood education begins with the development of learning tools or Learning Plan, which serves as the starting point for children's learning activities in the classroom. The selection of operational verbs (OAVs) written in the learning plan determines the learning process to be carried out.[7] If the planned learning is designed to achieve higher-order thinking skills, the OAVs used must consider the levels of Bloom's taxonomy (C4-C6). The selection of OAVs depends heavily on teachers' knowledge and understanding of HOTS concepts and the urgency of their application in their lesson plans. Previous studies have described the use of OAVs as an indicator of HOTS implementation in elementary, secondary, and higher education, but none have yet analyzed the use of OAVs in learning planning in ECE.[8] Previous research on HOTS in

Validity of an Instrument The Assessment of Higher Order Thinking Skills About Metabolism', *Bioeduscience*, 5.3 (2021), p.202

[5] Abdul Halim Abdullah and others, 'Mathematics Teachers' Level of Knowledge and Practice on the Implementation of Higher-Order Thinking Skills (HOTS)', *Eurasia Journal of Mathematics, Science and Technology Education*, 13.1 (2017), p. 15.

[6] Benidiktus Tanujaya, Jeinne Mumu, and Gaguk Margono, 'The Relationship between Higher Order Thinking Skills and Academic Performance of Students in Mathematics Instruction', *International Education Studies*, 10.11 (2017), p. 78.

[7] Muhammad Idham and Habib Rambe, 'Penulisan Tujuan Pembelajaran (Kata Kerja Operasional/KKO)', *Indonesian Journal of Educational Research (IJER)*, 1.5 (2025), p. 97

[8] Sufran Ady Putra Lete, Johana Manubey, and Elidat Benyamin Suan, 'Analisis Rencana Pelaksanaan Pembelajaran PAK Berdasarkan Taksonomi Bloom Ranah Kognitif pada SMP Negeri di Kota So'e Kabupaten TTS', *Discreet: Journal Didache of Christian Education*, 2.2 (2023), p. 112; Rezkiatu Novia Alhikmah and Yenita Roza, 'Analisis Kesulitan Guru Matematika SMP dalam Menyusun

ECE has been directly linked to strategies or integrated learning, but has not yet described teacher capabilities.[9] This understanding can be measured by their ability to define, translate, and comprehend meaning.[10] So this analysis needs to be carried out to provide an overview of teacher abilities as an initial foundation in implementing HOTS in ECE learning planning and determining follow-up actions.

Based on the above background, the purpose of this study is to analyze early childhood education teachers' understanding of HOTS implementation in lesson planning.

B. METHODS

This study used a quantitative descriptive method with the aim of providing a clear and detailed picture of the data that has been collected, so that it can facilitate interpretation and decision making based on the data.[11] The study involved 31 early childhood education (ECE) teachers in West Java. Random sampling was used for sampling. The questionnaire consisted of indicators that measured the ECE teachers' level of understanding, including defining, translating, and understanding meaning distributing questionnaire compiled in Google Forms. After the instrument was developed, validation was conducted using an informant review technique, involving two early childhood education (ECE) teachers to read and analyze the questions in the research instrument to establish a common

Rencana Pelaksanaan Pembelajaran (RPP) Berdasarkan Kurikulum 2013', 5.1 (2021), p. 655; Muhammad Idham and Habib Rambe, 'Penulisan Tujuan Pembelajaran (Kata Kerja Operasional/KKO)', *Indonesian Journal of Educational Research (IJER)*, 1 (2025), p. 98; Tumewa Pangaribuan, Uswatul Hasni, and Rizki Surya Amanda, 'Need Analysis: Pengembangan Model Pembelajaran Learning Cycle 5E untuk Meningkatkan Kemampuan HOTS Mahasiswa', *Journal of Education Research*, 4.4 (2023), p. 2399.

[9] Yusti Mistika, Saparahayuningsih Sri, and Indrawati, 'Jurnal PENA PAUD Volume 2 Nomor 2 (2021) Pages 44–52', 2 (2021), p. 48; Rusliah and others, 'Analisis Deskriptif Implementasi HOTS pada Model Project Based Learning', *Jambura Early Childhood Education Journal*, 5.1 (2023), p. 26; Siti Salamah, Rahmat Hidayat, and Ani Herniawati, 'Analisis Pembelajaran STEAM terhadap Kemampuan Berpikir Kritis (HOTS) Anak Usia 5–6 Tahun', *Jurnal Intisabi*, 1.2 (2024), p. 55.

[10] Helly Apriyanti, 'Pemahaman Guru Pendidikan Anak Usia Dini terhadap Perencanaan Pembelajaran Tematik', *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, 1 (2017), p. 111.

[11] Sudirman and others, *Metodologi Penelitian 1*, ed. by Suci Haryanti (Bandung: Media Sains Indonesia, 2023).

understanding between the researcher and the respondents. Data collection through converting answers into quantitative data categories and then analyzing data centralization measurements by calculating the mean and drawing conclusions.

Table 1. Indicators of teacher understanding about HOTS

No	Indicators	Descriptor
1	Defining	The teacher is able to define the basic concept of HOTS
2	Transla-ting	The teacher is able to differentiate the concept of HOTS from cognitive development
		The teacher is able to understand the urgency of implementing HOTS
3	Unders-tanding	The teacher is able to provide examples of the application of HOTS in the learning process
		The teacher is able to analyze the use of OAVS in the lesson plans prepared

C. RESULTS AND DISCUSSION

Based on the collected data, it can be concluded that 31 respondents were female. 37% of respondents had 5-10 years of teaching experience, 28.1% had 1-5 years of teaching, 18.8% had 10-15 years of teaching, and 15.6% had more than 15 years of teaching.

3.1 Definition Skills

3.1.1 Initial Experience with HOTS

Based on the data it can be concluded that 28 respondents (96.7%) had heard of HOTS, and the remaining 3 respondents (3.3%) had never heard of HOTS. The following data relates to the teachers' initial experiences:

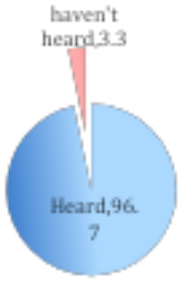

Figure 1. Basic Experience with HOTS

The results of this study indicate that early childhood education teachers' understanding of HOTS remains very low. This is in line with research which stated that teachers were still able to pose questions using Low-Order Thinking Skills (LOTS), than (HOTS).[12]

3.1.2 Early Childhood Education Teachers' Ability to Define the HOTS Concept

The results of teachers understanding HOTS was linked to their ability to create lesson plans and create HOTS-based activities. The

[12] Kartika Metafisika, 'Penilaian Keterampilan Bertanya Calon Guru PAUD sebagai Strategi Pengembangan Kognitif Anak Usia Dini', *Child Education Journal*, 1.2 (2019), p. 88.

results showed that of the 31 respondents, only one (3%) answered that their answer reflected an understanding of HOTS, and 3% answered that HOTS was an evaluation tool. Meanwhile, two (6%) answered that HOTS was a critical thinking skill, and 10% answered that HOTS was a divergent way of thinking. 13% answered that they didn't understand, and 13% answered that HOTS was a learning stimulus. Furthermore, 23% did not fully understand HOTS, and 29% did not fully understand the HOTS concept.

Table 2. Early Childhood Education Teachers' Ability to Define HOTS Concepts

No	Answers	Count	Percentage
1	Understands HOTS concept	1	3%
2	HOTS as an evaluation tool	1	3%
3	HOTS is a critical thinking skill	2	6%
4	HOTS is a different way of thinking	3	10%
5	Don't Understand	4	13%
6	HOTS is a learning stimulus	4	13%
7	HOTS is a cognitive ability	7	23%
8	Don't fully understand HOTS	9	29%

Instilling HOTS in children cannot be done instantly; it requires a continuous and consistent process. This process can be implemented throughout a lesson. Learning that is scientifically proven to develop students' HOTS is process-oriented and includes a series of activities, including investigations, projects, and problem-solving.[13] Teachers can structure learning around collaborative games, art activities, group discussions, the use of storybooks, and project-based learning to help stimulate children's development.[14]

Respondents who did not understand also stated that HOTS is a higher-order thinking skill, creative, and innovative. Only one respondent fully understood the HOTS concept, stating that "*HOTS is a higher-order*

[13] Nelly Fitriani and Anik Yuliani, 'P2M STKIP Siliwangi', *Jurnal Ilmiah P2M STKIP Siliwangi*, 3.2 (2016), p. 5.
[14] Luvita Orin Zahra and Aulia Rahma, 'Upaya Guru Meningkatkan Kemampuan Sosial Emosional Anak di TK', *Bunayya: Jurnal Pendidikan Anak*, 11.1 (2025), p. 101.

thinking skill for analyzing, evaluating, and creating". (R8)

Teachers' HOTS skills must be improved as a form of preparation to become teachers capable of teaching HOTS. The role of qualified and competent teachers is essential in establishing a sound learning process that can optimally develop children's potential.[15]

3.2 Translation Skills

3.2.1 Understanding the Difference Between HOTS and Cognitive Development in 6 Aspects of Children's Development

In order to explore how teachers perceive the difference between HOTS and early childhood cognitive development, data were collected through a survey. The findings are illustrated in Figure 2 below.

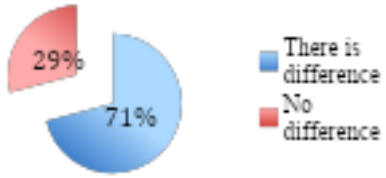

Figure 2. Understanding the Difference Between HOTS and Cognitive Development

Figure 2 above shows that, 22 teachers, or 71%, answered yes, and 9 students, or 29%, answered no. Some quotes from respondents indicating a difference between HOTS concepts and the cognitive abilities of early childhood are as follows: "*HOTS is not just about remembering or measuring concepts and procedures like cognitive abilities, but rather exploring cause and effect, thus providing a better understanding of events around them and providing the freedom to apply the knowledge gained.*" *(R6)*

3.2.2 Understanding the Urgency of HOTS Implementation in Early Childhood Education (ECE) Lesson Planning

This competency is measured based on teachers' understanding of the need to implement HOTS in ECE lesson planning. Twenty-nine respondents (93.6%) stated that HOTS needs to be implemented in ECE lesson planning because it can stimulate critical thinking skills, is beneficial for later life, maximizes children's development, develops problem-solving skills, and 21st-century competencies, enabling

[15] Syiran Almudzalifah and others, 'Bunayya: Jurnal Pendidikan Anak', *Bunayya: Jurnal Pendidikan Anak*, 10.2 (2024), p. 112.

children to be creative, innovative, and skilled. The following is an excerpt from respondents' responses: *"Necessary to train children to think through analysis, evaluation, and creation."(R3)*

One respondent (3.2%) stated that HOTS is unnecessary because it does not align with the character of ECE. One respondent (3.2%) stated that HOTS is essential for ECE lesson planning because it allows children to explore and discover new things.

3.3 Ability to Understand Meaning

3.3.1 Implementation of HOTS in Learning Activities

To examine the extent to which Higher Order Thinking Skills (HOTS) are implemented in learning activities, respondents were asked about their teaching practices. The results are presented in Figure 3

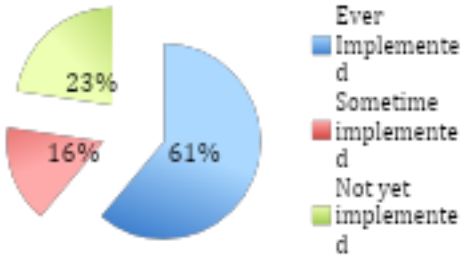

Figure 3. Implementation of HOTS in Learning Activities

It can be concluded that 19 respondents (61.2%) have implemented HOTS in learning activities, 5 respondents (16.1%) have implemented HOTS not always or sometimes, and 7 respondents (22.7%) have never implemented HOTS.

Data obtained from the questionnaire showed that of the 31 respondents, 28 provided answers related to learning that integrated HOTS elements, while three respondents did not provide an answer. Based on the analysis of the responses, not all respondents' answers described activities that integrated HOTS elements (the ability to analyze, evaluate, and create). Eight of the learning activities provided still utilized elements of LOTS (Lower Order Thinking Skills), as evident from the OAVs (Operational Work Card) used by teachers and the analysis of the outputs from the learning activities mentioned. Some of the learning activities mentioned fall into Bloom's taxonomy level C1 (writing and stating) and level C3 (doing, producing, implementing). The following are examples of LOTS

learning activities: "*Working on LKA (Children's Worksheet). Playing congklak, making a box with popsicle sticks". (R20)*

There are then 21 examples of learning activities that integrate HOTS elements (analyzing C4, evaluating C5, creating C6) both in terms of the use of OAVs and learning outcomes. The following are examples of HOTS learning activities: "*A balloon-popping activity using orange peels. In this activity, children will learn why orange peels can pop balloons. What happens if we replace the orange peel with a banana peel? In addition, children will observe why smaller balloons are more difficult to pop than larger balloons."(R3).* The data obtained also shows that several learning activities implement both LOTS and HOTS elements.

3.3.2 Use of OAVs (Operational Action Verbs) at Levels C1 to C6.

Preparing HOTS learning at the early childhood education level is crucial as a form of optimal stimulation so that children can develop higher-order thinking skills (including the ability to evaluate, analyze, and create) from an early age to face the demands of 21st-century learning. This aligns with a study which explains that the application of HOTS models can improve critical thinking skills, and student learning outcomes that needed for facing global competency.[16]

Early childhood education requires the implementation of HOTS to prepare children to face the challenges of entering elementary school.[17] Mastery doesn't happen naturally, but prioritizing HOTS development through curriculum design and teacher training is crucial.[18] Training can improve teachers' skills in integrating HOTS into learning and equip them with a better understanding of the role of

[16] Radiansyah Radiansyah and others, 'International Journal of Curriculum Development, Teaching and Learning Innovation Improving Children's Critical Thinking Skills in Elementary School through the Development of Problem Based Learning and HOTS Models', *International Journal of Curriculum Development, Teaching and Learning Innovation*, 1.2 (2023), p.52.

[17] Suppiah Nachiappan and others, 'The Development of Preschools' Higher Order Thinking Skills (HOTS) Teaching Model towards Improving the Quality of Teaching', *International Journal of Academic Research in Progressive Education and Development*, 8.2 (2019), p. 51.

[18] Aya Ragab, Ahmed Kaid, and Ahmed Khamis Sayed, 'Enhancing Higher Order Thinking Skills (HOTS) in Education: Strategies and Outcomes', *The Future of Education Journal*, 3.5 (2024), p. 1489.

innovation and creativity in student-centered learning.[19]

The results of the analysis of the use of OAVs (Operational Verbs) used by teachers in learning materials at levels C1-C6 show that at level C1, teachers most frequently use the words "mention, choose, and say"; at level C2, the most frequently used words are "tell, group"; at level C3, they use "count, find, and complete", at level C4, they use "distinguish/find differences", at level C5, they use "give your opinion (in your opinion), provide evidence/examples", and at level C6, they use "make, invent".

D. CONCLUSION

The ability to define HOTS from 31 ECE teachers is described that most teachers 96.7% have heard about HOTS, but 29% have not fully understood the concept of HOTS. The ability to translate HOTS is described that 71% can understand the difference between HOTS and cognitive concepts and a total of 29 respondents (93.6%) stated that HOTS needs to be applied to ECE learning planning. The ability to understand the meaning is described in the conclusion that as many as 19 respondents (61.2%) have applied HOTS in learning activities, such as implementing OAVs (analyzing C4, evaluating C5, making C6). Further research involving a larger and broader population in Indonesia is needed to measure and analyze more deeply the extent to which the HOTS concept is understood by early childhood education teachers and educators.

[19] Siti Atwano Pisriwati and others, 'Question Making Training with LOTS, MOTS, and HOTS Cognitive Levels for High School Teachers', *Journal of Social and Community Development*, 1.01 (2024), p. 12.

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