The Implementation of Higher-Order Thinking Skills in Malay Language Teaching and Learning for the Holistics Development of Level 2 Primary School Students: A Systematic Literature Review

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ABSTRACT: *The implementation of Higher-Order Thinking Skills (HOTS) in education has garnered increasing attention among scholars in Malaysia. Key issues often linked to HOTS include the extent of teachers' practice of HOTS in the classroom, students' understanding of HOTS, and their ability to apply these skills in assessments particularly within the Malay Language subject. However, the integration of HOTS specifically in Malay Language teaching and its role in shaping student outcomes has received limited emphasis in previous studies. This study presents a Systematic Literature Review (SLR) focused on HOTS in the teaching and learning of the Malay Language, with the aim of contributing to the holistic development of Level 2 primary school students. Adopting a qualitative approach, this review synthesizes findings from relevant articles obtained through databases such as Google Scholar, MyJurnal, and ERIC. Article selection followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flowchart to ensure a systematic and transparent review process. A total of 15 articles met the inclusion criteria and were analyzed based on recurring issues, research designs, methodologies, and key findings. The objectives of this SLR are to: (i) analyse teachers' understanding and the selection of HOTS strategies applied in the teaching and learning process; (ii)explore the challenges in implementing HOTS applied in teaching and learning; and (iii) explore students' acceptance and mastery of the application of HOTS in teaching and learning. The findings reveal that teachers' comprehension and pedagogical approaches significantly affect the successful integration of HOTS. Common challenges include time constraints and the need for innovative teaching methods. Furthermore, students' writing skills reflect their acceptance and mastery of HOTS when these skills are actively nurtured during instruction. The study highlights the need for continued research on student development at the primary level, especially among Level Two pupils, to strengthen the implementation of HOTS in future educational practices.*

I.   INTRODUCTION

The integration of Higher-Order Thinking Skills (HOTS) into classroom teaching and learning (T&L) has become a widely adopted and prioritised practice among educators. This emphasis stems from the Malaysian Ministry of Education's directive in the Malaysian Education Blueprint 2013–2025 (MOE, 2013), which underscores the importance of cultivating critical and creative thinking among students. The implementation of HOTS promotes a student-centred learning environment, positioning teachers as facilitators who guide students in understanding and engaging with instructional content (HOTS Elements in Pedagogy, 2014). When students apply HOTS effectively, they are better equipped to develop holistically, enhancing both academic performance and the practical application of knowledge in everyday life.

In this regard, incorporating HOTS in the teaching of the Malay Language is essential. It fosters learners who are capable of generating innovative ideas and thinking beyond conventional boundaries when tackling tasks that demand analytical and creative responses. This aligns with Fadilla and Zamri (2019), who highlighted that the National Education Transformation through the introduction of the KSSR and KSSM curriculum frameworks has positioned thinking skills and strategic learning approaches at the core of the T&L process to nurture intellectual development among students.

This Systematic Literature Review (SLR) explores findings from prior research related to the significance of HOTS practices, students' acceptance and proficiency in applying HOTS, and the extent to which these practices enhance topic mastery particularly in the context of the Malay Language subject. While HOTS holds great promise in producing learners with refined cognitive abilities, its success is highly contingent upon students' ability and willingness to engage with these approaches. It is therefore imperative to assess the actual impact of HOTS implementation on students' understanding, especially in key subjects like Malay Language. This perspective resonates with Anida et al. (2020), who argued that a competent Malay Language teacher is one who recognises and upholds the subject's role as a pillar within the national education framework.

Through the active implementation of HOTS strategies by Malay Language teachers, students' holistic development can be effectively cultivated. This review analyses how HOTS is applied in T&L, with a specific focus on the Malay Language, and addresses the associated challenges and levels of student mastery. The scope of this SLR centres on Level 2 primary school students (Years 4 to 6), a critical stage during which learners begin to exhibit cognitive maturity, increased independence, and the foundational competencies necessary for progression to secondary education.

II.   RESEARCH OBJECTIVES

This systematic literature review aims to:

1.   Analyse teachers' understanding and the selection of HOTS strategies applied in the teaching and learning process.

2.   Explore the challenges in implementing HOTS applied in teaching and learning.

3.   Explore students' acceptance and mastery of the application of HOTS in teaching and learning.

III. RESEARCH METHODOLOGY

1. Research Design

Most of the journals and articles referenced in discussing the application of HOTS adopt qualitative research methods. This approach is primarily concerned with the exploration of social phenomena and emphasizes understanding human attitudes, perceptions, and underlying theories related to specific behaviours. Such a focus aligns well with the theme of this concept paper, which centres on the integration of HOTS in education. According to Moriarty (2011), qualitative research is a broad methodological approach frequently applied in fields such as sociology, anthropology, philosophy, social psychology, and linguistics. In light of this, the qualitative method is deemed suitable for this study, as it falls within the linguistic domain. This approach allows researchers to explore and understand the selected topic in greater depth and detail. As noted by Loraine Busetto et al. (2020), qualitative methods are particularly effective in answering the "what", "how", and "why" questions related to a research topic. This reinforces the appropriateness of using a qualitative approach in this study, as the core theme HOTS involves a deep investigation into what it is, how it is applied, and why it is essential in the teaching of the Malay Language, particularly for Level 2 primary school pupils.

Mohd Majid (2005) also highlights that qualitative research emphasizes experiences, perceptions, and human attitudes in relation to the research focus. This conceptual perspective is highly relevant to the current study, as the HOTS theme directly involves all three elements highlighted by the scholar. While a few of the reviewed studies employed quantitative methods typically involving data analysis to inform discussion qualitative methods remain more prominently used in past research related to HOTS. This is largely because HOTS is inherently linked to cognitive understanding and the application of knowledge, both of which are essential for driving transformation and enhancing learning outcomes.

2. Selection of Articles

Most of the samples observed in previous studies related to the theme of this concept paper consisted of teachers themselves. However, there are also past articles that focused on students to obtain findings related to the HOTS theme being studied. This approach is intended to ensure that the information gathered is valid and can serve as a reliable reference for producing research findings.

3. Instrument

Most of the previous studies reviewed for the development of this concept paper involved the use of interview methods and the preparation of questions to be presented to research samples in order to address the predetermined research questions. According to Parvathy et al. (2022), the interview method can lead to valuable observations that reveal how clearly the main focus of the study is demonstrated. Sulaiman et al. (2021) also noted that the use of structured and semi-structured interview questions helps guide the respondents in answering the questions posed to them. In addition, several referenced studies also employed questionnaires and tests as instruments in their research.

4. Data Collection

The data collection process for the articles referenced in the development of this concept paper involved the use of thematic analysis. In addition, some studies utilised verbatim transcripts gathered from interview responses. Other articles employed the SPSS method to collect and analyse data. The findings were then organised according to the established research objectives and questions to ensure that the results were presented systematically and coherently.

5. Data Analysis

The data analysis process conducted by previous researchers, as referenced in this concept paper, involves organizing all responses obtained from interviews conducted with respondents, who are their research samples. Software such as SPSS, which utilizes descriptive statistical analysis and standard deviation, is used to analyze

the information gathered. This study employs a Systematic Literature Review (SLR). The research method used is document analysis of articles, journals, and theses written by scholars. This study encompasses learning design, methodology, research respondents, and findings. The SLR method involves a structured approach to searching, evaluating, and presenting information from various literature sources selected systematically.

The information search method was carried out by accessing databases such as Google Scholar, *MyJurnal* and ERIC as a means to obtain quality materials that are relevant to the study. This method applies a systematic search using keywords, following the SLR principles adopted by modern researchers (Abur Hamdi et al., 2020). In this study, the keywords used were "HOTS,""Primary School,""Student Outcomes,""Level 2,""Critical Thinking,""Higher Order Thinking Skills," and "KBAT Primary" to retrieve the relevant data.

In conducting this SLR, the researcher used procedures such as the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Moher et al., 2009). The application of this method assists in writing literature reviews more clearly and accurately (Perrez & Reuchamps, 2020). There are four stages in PRISMA: identification, screening, eligibility, and inclusion. The review and selection process began by entering keywords such as "Higher-Order Thinking Skills" and "Student Outcomes" into the search engine to find relevant studies. Figure 1 shows the selection process of the 15 articles analyzed in this study.

6. Identification

At this stage, the researcher must determine a clear scope of the study to facilitate the research process. To conduct a title search, an electronic search strategy must be carried out using at least one main database (Liberati et al., 2009). One database is required to apply an electronic search strategy through title searches (Liberati et al., 2009). This is supported by Xiao and Watson (2019), who stated that using more than one database can help bridge existing gaps. The search was conducted by accessing databases such as Google Scholar, *MyJurnal*, and ERIC.

In this study, the keywords "Higher-Order Thinking Skills", "HOTS", and "student holistic development" were used to gather research data. Search engines within the databases allow researchers to find synonyms or terms representing the topic within the keywords. The selection of accurate keywords is essential to obtain comprehensive and relevant information aligned with the topic being discussed. During the identification stage, a total of 140 articles were identified for screening. Table 1 shows the number of articles identified and the databases from which they were sourced.

Table 1. Number of articles identified

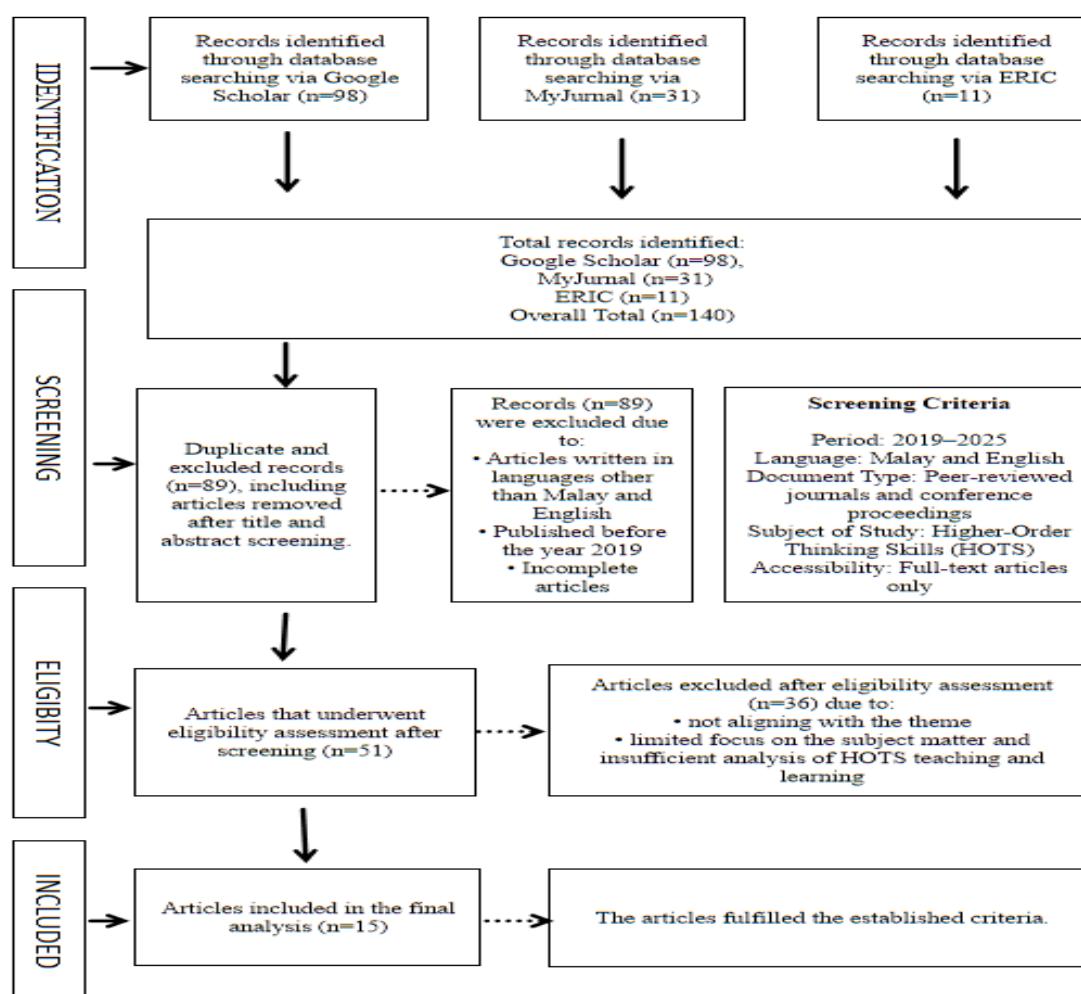| Databases	Number of Articles
Google Scholar	98
MyJurnal	31
ERIC	11

Figure 1. PRISMA Flowchart in the Sample Search Process
Source: Moher et al.(2009)

7. Screening

At this stage, the researcher analyzed documents from journal articles and conference proceeding papers. The article search was limited to publications from the year 2020 up to April 2025. Discussions on the application of HOTS at the school level have been actively conducted during this period. This study applied to a Systematic Literature Review (SLR), which covers the year of publication, background, research problem, methodology, and research findings. In this study, Malay was chosen as the medium of instruction for literature articles.

The search results revealed several reference materials suitable for analysis within the SLR framework. During this stage, 89 articles were excluded due to duplication and repetition of the same articles across different databases. The screening process continued by removing articles that did not meet the predefined inclusion criteria. Among the criteria set for article selection were: publications between 2019 and 2025, literature types such as journals and conference proceedings, and articles written in either Malay or English.

Table 2. Inclusion and exclusion criteria

Criteria	Inclusion	Exclusion
• Type of Literature	•Journals or conference proceedings	•Books
•Language	•Malay and English languages	•Languages other than Malay and English
•Year of Publication	•Year 2019–2025	•Published before 2019
•Index	•Google Scholar, *MyJurnal*, and ERIC	•Sources other than Google Scholar, *MyJurnal*, and ERIC
•Country	•Malaysia	•Countries other than Malaysia

8. Eligibility

The third phase is the eligibility phase, which involves manual selection by ensuring that the articles meet the inclusion criteria (Figure 1) and are suitable for use in the current study to fulfill its objectives. This process begins by reading the title and abstract of each article, and the full article if the relevance is unclear. Subsequently, articles that do not meet the criteria and are not aligned with the research theme are excluded. A total of 51 articles were assessed for eligibility based on the study's criteria at this stage. As a result, 36 articles were excluded for not meeting the research criteria related to Higher-Order Thinking Skills (HOTS).

9. Included

At the final stage of this process is the Included phase. During this stage, the researcher identifies the final number of articles used as the study sample in the SLR. A total of 15 articles met the inclusion criteria at this stage and were used to identify past studies related to HOTS.

IV.   LIST OF SYSTEMATIC LITERATURE REVIEW STUDIES

A total of 15 articles focused on discussions related to HOTS. The selection of study materials was guided by the research objectives and limited to the keywords specified in this article. Table 2 presents the details of the 15 journal articles and conference proceedings identified through the SLR, including the authors' names, year of publication, article titles, journal names, methodologies, and research findings.

Table 3. List ofSLR studies related to Higher-Order Thinking Skills (HOTS)

No.	Year	Author(s)	Title	Journal Name	Methodology	Research Findings
1.	2021	Bernard Tahim Bael, Suppiah Nachiappan & Maslinda Pungut	Analysis of Teachers' Readiness in the Implementation of Higher Order	Muallim Journal Social Science and Humanities	Design: Qualitative Instrument:	• Teachers were found to have an incomplete and unclear understanding of

			Thinking Skills in 21st Century Learning, Teaching, and Facilitation		Interview Sample: 10 academic teachers	the concept and implementation of HOTS. • Teachers have yet to fully master the content and key elements of 21st Century Learning (PAK21), resulting in suboptimal implementation. • Teachers demonstrated a low level of readiness and are not yet fully prepared to effectively implement HOTS in 21st-century teaching and learning
2.	2021	Zarina Abu Baker & Wan Muna Ruzanna Wan Mohammad	The Effectiveness of Using the I-Think Map Method Among Senior Malay Language Teachers in National Schools in the Seremban District	Jurnal Dunia Pendidikan (Journal of the World of Education)	Design: Qualitative Instrument: Interview Sample: 3 senior female teachers	• The use of the I-Think Map as a 21st-century learning technique was well received by teachers. • The I-Think Map had a positive impact on students' emotions and motivation. • Students showed increased focus and engagement during teaching and learning sessions. • The I-Think Map helped students enhance their understanding and generate new

						and insightful ideas.
3.	2021	Chew Fong Peng & Nur Juliana Masingan Abdullah	Knowledge, Attitudes, and Readiness of Students Towards Higher Order Thinking Skills in Writing Skills	Journal of Malay Language, Education and Literature	Design: Quantitative (Descriptive Survey) Instrument: Questionnaire Sample: 144 Form Two students	• The level of knowledge, attitude, and readiness of Form Two students towards the use of HOTS in Malay language writing skills is high. • There is a significant difference in students' attitudes and readiness based on gender. • These findings have important implications for teachers in planning and implementing more effective teaching approaches.
4.	2022	Muhammad Affan bin Ahamad, Erda Wati binti Bakar & Jowati binti Juhary	Higher Order Thinking Skills through the Constructivist Approach in Language Arts Teaching	Malaysian Journal of Social Sciences and Humanities	Design: Qualitative Instrument: Literature review and document analysis Sample: Educational journal articles and previous empirical studies	• HOTs in the aspect of language arts involves a combination of competency theory and the constructivist approach. • This conceptual paper serves as a guide for teachers to practise the implementation of HOTs in the language arts component at the

						primary school level.
						• There is a correlation between teacher competency and the constructivist approach, where the integration of HOTs into language arts has a positive impact on teaching effectiveness.
5.	2021	George Romiko Bujang & Mary Fatimah Subet	The Integration of the Inquisitive Semantic Approach with Higher Order Thinking Skills in the Teaching and Learning of Language Arts Materials	Journal of Malay Language, Education and Literature	Design: Qualitative Instrument: Text analysis of language arts materials and data from student respondents Sample: 7 Year Five students	• The integration of the Inquisitive Semantic (SI) approach with HOTS can help students uncover the implicit meanings embedded in language arts materials. • The use of the SI approach guided students to explore deeper and hidden meanings within the text, subsequently leading to a more meaningful and high-quality learning process.
6.	2021	Nurulhuda Md Hassan, Nur An Nisa Fithri Mohd Noor, Yamuna Thasarathan, Qarihatun Najah Zainudin, Nur Syaidatul Aisyah Zainuri, Nurul	Teachers' Perspectives on Higher Order Thinking Skills Among Students	Journal of Humanities and Social Sciences	Design: Qualitative Instrument: Interview Sample: One experienced teacher	• Students have not yet fully mastered HOTS, and there is still room for improvement. • Differences in student backgrounds,

		Raihana Najwa Mohamad Rizuaden, Nurfara Adilah Muhamad Fauzi, Nurfatihah Tumin, Nur Afina Syahida Mohamad Jefri			such as socioeconomic status and school type, affect their ability to apply HOTS. • Teachers select HOTS teaching strategies based on factors such as student ability, available resources, and the classroom environment. • The use of effective questioning techniques can stimulate higher order thinking among students. • 21st Century Learning methods (PAK21), consistent exposure to HOTS questions, and group assignments can help students apply HOTS, especially during assessments.
7.	2023	Chrisitina Andin & Rosmiza M.Z	Teaching Higher Order Thinking Skills Across the Curriculum: Teachers' Challenges in Implementation	Jurnal Pemikir Pendidikan (Journal of Educational Thinkers) Design: Qualitative Instrument: Interview Sample: 6 secondary school teachers	• Teachers face challenges in adapting to the demands of innovative teaching. • Some teachers admit to a lack of confidence in implementing student-centred approaches and encounter

						• difficulties in designing activities that can stimulate higher-order thinking.
						• Environmental factors also contribute to the challenges in implementing HOTS.
						• Teachers feel that the monitoring and evaluation of HOTS policy implementation are still ineffective.
8.	2021	Sharwinthiran Thavarajah, Anida Sarudin, Zulkifli Osman, Husna Faredza Mohamed Redzwan, Wiwiek Afifah & Mohd Amir Mohd Zahari	Analytical and Holistic Assessment of Higher Order Thinking Skills Elements in Writing Based on the Theory of Conceptual Metaphor	Jurnal Pendidikan Bahasa Melayu (Journal of Malay Language Education)	Design: Qualitative Instrument: Checklist developed based on principles from the Conceptual Metaphor Theory Sample: 2 introductory paragraphs from Form Four students' essays	• HOTS can be identified in students' writing, particularly in the introductory sections of discussion-type essays. • Findings indicate that students employed various types of conceptual metaphors. • The application of Conceptual Metaphor Theory aids in examining students' thinking structures explicitly. • Analytical and holistic assessment approaches enable a deeper understanding of students' thought processes.

No.	Year	Author	Title	Journal	Methodology	Findings
9.	2023	Nik Rozialnida Nik Lah & Shahlan Surat	Exploring teachers' understanding of HOTS and their questioning practices across the three phases of learning	Jurnal Dunia Pendidikan (Journal of the World of Education)	Design: Quantitative (Descriptive) Instrument: Structured Questionnaire Sample: 6 non-option Science subject teachers	• All six participants possessed knowledge about HOTS. • The study participants acquired information about HOTS through four different methods. • However, they felt that they had not yet fully understood the concept of HOTS. • The participants believed that incorporating HOTS into the learning process could make lessons more interactive.
10.	2020	Norziana Mat Rabi, Zulkifli Osman, Anida Sarudin, Husna Faredza Mohamed Redzwan & Norfishah Mat Rabi	The Integration of Higher Order Thinking Skills (HOTS) Elements in Year Six Malay Language Textbooks for Primary Schools	International Journal Of Language Education And Applied Linguistics	Design: Content Analysis Instrument: Checklist of HOTS Elements and Learning Activity Instructions Sample: Year Six Malay Language Textbook (KSSR Edition 2015)	• HOTS elements were applied in only 29.70% of the textbook content. • Writing skills recorded the highest level of HOTS integration. • Reading and Speaking skills showed lower levels of HOTS implementation. • The "creating" element was the most frequently applied HOTS skill.

					• The integration of HOTS elements was uneven across learning units, language skill types, and HOTS categories.
11	Nuraffefa binti Hamdan, Yee Mei Heong, Azrol bin Jailani, Saiful Hadi bin Masran, Kok Boon Ching, Tee Tze Kiong & Mimi Mohaffyza binti Mohamad	The Use of Thinking Styles and Higher Order Thinking Skills (HOTS) in Problem Solving for Product Creation: A Needs Analysis	Sains Insani (Journal of Human Sciences)	Design: Descriptive Quantitative Instrument: Questionnaire Sample: 320 randomly selected students	• A total of 90.9% of students reported that they faced difficulties when solving problems. • They experienced challenges in using their minds to find meaning and solutions to doubts or arising issues, as well as difficulties in generating ideas to develop a product. • There is a significant need for knowledge on Thinking Styles and HOTS. • 95.6% of students stated that they require knowledge related to thinking styles and HOTS.
12.	2020 Farah Aziana Abdul Aziz, Fadzilah Abd Rahman & Shamsudin Othman	Strategies for Integrating Higher Order Thinking Skills in the Teaching of Writing Skills in Primary Schools	International Journal of Education and Training	Design: Case study Instruments: Direct observation, semi-structured interviews, and document	• A total of 14 strategies were actively used in the teaching and learning of writing skills. • All six teachers involved in the study implemented

					analysis	teaching based on HOTS.
					Sample: 6 Year 5 Malay language teachers	• All teachers began HOTS teaching by identifying objectives, assessing students' readiness, selecting suitable teaching methods, and planning HOTS-based assessment activities.
						• There were differences in the capacity and effectiveness of HOTS implementation.
13	2019	Mazarul Hasan Mohamad Hanapi & Norazimah Zakaria	Higher Order Thinking Skills (HOTS) Through Proverbs in Multimedia Materials for the Teaching of Malay Language in Primary Schools	International Journal of Modern Education	Design: Qualitative Instruments: Content analysis guide, semiotic elements checklist, and semi-structured interviews Sample: Selected episodes from the animated series *Pada Zaman Dahulu* and 5–10 primary school Malay language teachers	• Content analysis found that the proverbs used in the *Pada Zaman Dahulu* cartoon series are capable of stimulating higher-order thinking among pupils. • Semiotic elements enhanced the understanding of proverbs, as the cartoon uses visuals, characters, and narrative to effectively portray the relationship between signifier and signified. • Findings showed that pupils were

						• better able to construct the meaning of proverbs when they had the opportunity to watch and discuss the cartoon episodes in a collaborative setting.
						• *Pada Zaman Dahulu* successfully captured pupils' interest in learning proverbs, which were previously perceived as difficult and boring.
14	2020	Noel Jimbai Balang, Zamri Mahamod & Nor Aishah Buang.	The Practice of Higher-Order Thinking Skills (HOTS) by Malay Language Teachers in Lesson Study.	Regional Conference on Lesson Study	Design: Qualitative using the action research method	• Malay language teachers practice Higher-Order Thinking Skills (HOTS) in teaching through various student learning activities.
					Instruments: Interviews, observations, and document analysis	• Teachers demonstrate a positive attitude and willingness to implement lesson study. .
					Sample: 7 Malay language teachers	• The success of lesson study implementation depends on reducing teachers' workload.
						• Time allocated for lesson study meetings should be incorporated

					Design:		into the teaching schedule to ensure more effective implementation.
15	2021	Hairul Faiezi Bin Lokman, Chin Mei Keong, Pushpavalli A/P A.Rengasamey & Hajarul Bahti Binti Zakaria	Empowerment of Higher-Order Thinking Skills (HOTS) Elements and Implementation Challenges During the Covid-19 Pandemic	National Conference on Pedagogical Practices and Inclusive Education (APPI) 2021	Design: Qualitative (Survey Research) Instrument: Questionnaire Sample: 51 students	•	Lecturers from all three option fields (Special Education, TESL, and Malay Language) successfully empowered the four elements of HOTS.
						•	The challenges in implementing HOTS during the Covid-19 pandemic included inadequate information technology skills, unstable or limited internet access, and difficulties in applying HOTS elements during online teaching sessions.

V. RESEARCH FINDINGS

Objective 1: **Analyse Teachers' Understanding and the Selection of HOTS Strategies Applied in the Teaching and Learning Process**

Objective 1 aims to address two aspects, teachers' understanding of HOTS and the selection of teaching strategies by Malay Language teachers.

1. Teachers' Understanding of HOTS
Based on the selected articles and journals referred to in conducting this SLR, it can be concluded that teachers require a comprehensive understanding to effectively implement HOTS among students. Findings from the study conducted by Nik Rozialnida and Shahlan (2023) revealed that while teachers understand the concept of HOTS, their understanding is not in-depth. The PISA 2022 Preliminary Report indicated that 50.1% of female

students and 66.2% of male students only achieved Proficiency Level 1a in Reading Literacy. This highlights the critical importance of implementing HOTS practices in the Malay Language subject, as it falls under the domain of Reading Literacy. This is in line with Norziana's (2020) view that, in order to produce students who are competitive, HOTS practices must be introduced from primary school, with teachers serving as the main agents to ensure this implementation. Such low achievement levels suggest that Malaysian students are unable to apply and utilize HOTS to understand their learning, which in turn places the country in an unfavorable position globally.

In addition, Mohd Shafie (2021) emphasized that in order for students to fully master HOTS, teaching practices must evolve in line with current developments. This ensures that students can understand and respond effectively to HOTS-related questions. This statement is consistent with the view of Bernard et al. (2021), who noted that the emphasis on HOTS is crucial for teachers, as its implementation enables 21st-century learning (PAK21) to be carried out effectively.

2. Selection of Teaching Strategies

The analysis of the journal article found that Malay Language teachers use various teaching strategies. The analysis revealed that the teachers applied three pedagogical strategies, namely the constructivist strategy, the inquiry strategy, and the inquisitive semantic strategy..

2.1 Constructivist Strategy

The selection of teaching and learning strategies among teachers must be appropriate to ensure that HOTS can be instilled in students in the classroom. This is because through the selection of the right strategies, students can understand and apply HOTS based on their existing knowledge, helping them to shape their holistic development. HOTS supports students in thinking deeply and not relying solely on rote memorization of facts. Through pedagogical approaches such as inquiry-based learning, problem-solving, and collaborative learning, students are trained to evaluate information objectively. This is also in line with the view expressed by Alihuddin et al. (2014), who stated that to achieve the Ministry of Education Malaysia's (MOE) aspiration of integrating HOTS elements, an appropriate learning approach needs to be implemented to attract students' interest.

Findings from the article by Noel Jimbai et al. (2020) stated that Malay Language teachers have applied constructivist approaches and strategies in practicing HOTS during teaching and learning. As a result, students are more prepared to face new content during Malay Language lessons, discover their talents, and expand their knowledge. Teachers carefully prepare the Daily Lesson Plan (RPH) to reflect the implementation of HOTS during instruction. The study conducted by Zarina and Wan Muna Ruzanna (2021) also explained that the use of i-Think maps by teachers when teaching a particular topic helps build new knowledge in students, in line with constructivist theory. Students stated that Malay Language teachers should use the constructivist approach in teaching language arts and integrate it with HOTS elements to make lessons more interesting and to help them better understand the HOTS applied by the teacher. The connection between HOTS and 21st Century Learning (PAK21) contributes to student development. If students can answer HOTS questions well, then indirectly, student development has been successfully achieved through the effective application of HOTS in the teacher's selected teaching strategies.The importance of the constructivist approach in implementing HOTS was also highlighted in a study conducted by Nik Rozialnida and Shahlan (2023). Students find it easier to recall lesson content when using i-Think maps, and the learning objectives set by teachers are achieved, which subsequently improves student performance and indirectly shapes the development of students into individuals with broad knowledge in the subjects they learn. The researchers also stated that effective education can produce a society with a first-class mindset, comparable to that of developed nations.

This explanation is consistent with the findings of a study by Muhammad Affan et al. (2022), which stated that Malay Language teachers should use the constructivist approach in teaching language arts and integrate it with HOTS elements to make the lessons more engaging, enabling students to better understand the HOTS elements applied by the teacher. The link between HOTS and PAK21 contributes to student development. If students can answer HOTS-based questions effectively, then indirectly, their holistic development has been shaped through the successful implementation of HOTS in the teaching strategies chosen by the teacher. The importance of the constructivist approach in implementing HOTS was also emphasized in the study by Nik Rozialnida and Shahlan (2023).

2.2 Inquiry Strategy

Inquiry-based learning refers to students searching, exploring, and investigating problems using their senses and cognition, as stated by Nur Aqilah and Noor Dayana (2020). In addition to the constructivist approach for integrating HOTS in teaching and learning, teachers can also use the inquiry-based teaching method to be applied to students in the classroom. According to the findings of a study conducted by Anida et al. (2020), teachers who taught Malay Language to Orang Asli students in secondary schools in the state of Perak had used the inquiry approach during classroom instruction. The teacher would pose questions to the students and ask them to relate them to the topic being discussed. Then, the students would actively respond to the questions given. The findings of this study are also in line with the opinion expressed by Syed Abu Bakar (2022), who stated that integrating the inquiry method into teaching and learning makes the process more engaging.

2.3 Inquisitive Semantic Strategy

According to the article referenced in conducting this SLR, studied by George Romiko and Mary Fatimah (2021), it was found that if Year 5 students learn poetry in the Malay Language subject using the inquisitive semantic approach, they will be more capable of being creative and innovative in answering the questions given by the teacher. Students are able to explore the meaning of a word and relate their understanding to further develop the meaning of the poem they are learning in class. This aligns with the opinion expressed by Mary Fatimah and Mohd Ridzuan (2019), who stated that using the inquisitive semantic approach in teaching Malay proverbs in secondary school makes it easier for teachers to help students understand proverbs during lessons.

A study by Nuraffefa et al. (2021) emphasized that problem-solving requires complex thinking, which is HOTS, and that an individual's thinking style needs to be identified in order to apply HOTS effectively. This statement clearly shows that if HOTS is implemented properly, students' holistic development can be achieved. Through teaching and learning techniques related to HOTS, the application of HOTS among students will certainly succeed in producing what Malay Language teachers ultimately hope for students who are able to connect what they already know with the learning objectives set for them.

Objective 2: Explore the Challenges in Implementing HOTS Applied in Teaching and Learning

The following review relates to the challenges in applying HOTS in teaching and learning. The application of HOTS to students by teachers in schools requires significant effort and efficiency. Based on the findings from the articles and journals selected for this Systematic Literature Review (SLR), two main challenges have been identified in implementing HOTS in teaching and learning, namely time constraints and lack of collaboration, as well as pedagogical innovation

1. Time Constraints and Lack of Collaboration

According to the findings of the study by Nurulhuda et al. (2021), time constraints among teachers are a major challenge faced in implementing HOTS elements to students in schools. Teachers are required to keep up with the syllabus, and as a result, they do not have sufficient time allocation to apply HOTS effectively in the classroom. In addition, findings from a study conducted by Chrisitina and Rosmiza (2023) stated that the lack of collaboration within the school environment makes it difficult for teachers to apply HOTS elements to students. If a teacher does not receive strong support from colleagues, for example, it becomes quite challenging for them to implement HOTS in their teaching. The findings from both articles highlight the challenges in implementing HOTS in the teaching and learning process.

2. Pedagogical Innovation

The aspect of innovation is also a challenge in implementing HOTS, based on the findings of the articles selected for this SLR. According to Chrisitina and Rosmiza (2023), their study found that teachers believed innovations in teaching and learning that are capable of promoting HOTS among students are only suitable for high-achieving students and high-performing schools.Students in regular schools, especially those in lower-performing classes, tend to struggle to understand innovations related to HOTS when teachers use them during the teaching and learning process.The article also emphasized that teachers need to be creative in teaching HOTS to students. Creativity itself leads to innovation. This finding is supported by the statement of Hairul Faiezi Lokman et al. (2021), who explained that limited teaching materials result in restricted understanding of HOTS-related questions during lessons. Teaching materials are closely related to innovation.

Objective 3: Explore Students' Acceptance and Mastery of the Application of HOTSin Teaching and Learning

Based on the findings from the study by Farah Aziana et al. (2020), it was stated that Year 5 students are capable of implementing HOTS in writing skills using the abilities to analyse, evaluate, and create. As a result, students were able to produce interesting essays. This is made possible when teachers provide students with sufficient HOTS knowledge, allowing them to express their understanding through specific subject skills, particularly in Malay Language. This is supported by the findings of a study conducted by Mazarul Hassan and Norazimah (2024), which highlighted the use of multimedia materials, such as the animated cartoon *"Pada Zaman Dahulu"*, in teaching proverbs to stimulate HOTS among primary school students. This approach applies semiotic theory, which emphasizes the importance of symbols and signs in helping students understand the meanings of proverbs through the relationship between the signifier and the signified. The use of visual materials aims to make learning more engaging and helps students relate the proverbs to real-life contexts.

According to a study by Nik Rozialnida and Shahlan (2023), HOTS has the potential to develop students who can evaluate and reflect on the learning they have received. This will lead to students with broader knowledge who can apply what they've learned at an optimal level. The findings are also relevant for Malay Language teachers at the primary level to expand HOTS implementation to Level 2 students. This is because these students have begun learning more concrete topics, such as expressing opinions and writing both formal and informal essays. If Level 2 students are exposed to HOTS elements, they can apply them within their learning content.

A study conducted by Chew and Nur Juliana (2021) showed that Form 2 students are able to use HOTS in their Malay Language writing skills and demonstrated a positive response to its use. This is typically influenced by the integration of HOTS in classroom lessons and suggests that these students may have already been introduced to HOTS elements during primary school. Consequently, students can apply their prior knowledge when answering questions involving writing skills. The findings of this study can serve as an

example of how HOTS can be applied to Level 2 students, as writing skills are already being emphasized at that's.

VI.   DISCUSSION

This SLR was conducted using databases such as Google Scholar, My Jurnal, and ERIC as sources for gathering information related to the research topic. Based on the SLR analysis, the findings revealed that although many previous researchers have studied the application of Higher Order Thinking Skills (HOTS), less emphasis has been placed on its importance in developing students' holistic growth, especially for Level 2 students in primary schools. Most of the articles selected for this SLR focused on aspects such as teachers' and students' understanding of HOTS, suitable approaches for implementing HOTS to students, and the evaluation of students' ability to apply HOTS in their responses.

However, the findings from these articles are still relevant and useful for addressing the objectives of this SLR, as teachers' understanding of HOTS and the approaches they use to implement it can be extended to Level 2 students in primary schools. For example, the use of constructivist approaches in lesson planning enables students to feel more prepared to engage with new knowledge during the Malay Language teaching and learning process in the classroom. Other examples include the use of i-Think maps to emphasize HOTS in various Malay Language topics, the emphasis on constructivist elements in teaching language arts, the use of inquiry-based approaches, and inquisitive semantic approaches in poetry lessons. These findings help address the first objective of the study.

In addition, the challenges of implementing HOTS, as reported in the articles reviewed, include time constraints, lack of collaboration, and innovation-related limitations; these were the most dominant challenges identified. The lack of collaboration among teachers, pressure to complete the syllabus, and insufficient innovation in developing engaging teaching aids were seen as barriers to fully implementing HOTS among students. Given these challenges, future studies should investigate how such issues can be addressed in order to foster the holistic development of Level 2 students through the application of HOTS which would align with the second research objective.

Furthermore, the findings from articles that highlighted the ability of Year 5 students to apply HOTS in writing skills and the continuation of this understanding in secondary school essay writing indicate the relevance of reinforcing HOTS among Level 2 primary students. Writing skills are a key focus in Malay Language learning, and students have the potential to reflect on their learning when HOTS is integrated into their classroom experiences. These findings contribute to answering the third research objective. If teachers do not actively expand HOTS knowledge to students, the quality of student responses will be compromised, as supported by the findings of Chew and Zul Hazmi (2018), which serve as a reinforcement example.

Based on the selected journal articles, there is a noticeable gap in addressing student holistic development through the application of HOTS. This is seen as highly relevant and important to explore further, as a comprehensive understanding of HOTS by teachers allows them to effectively transfer that knowledge to their students. This becomes even more crucial when extended to Level 2 primary students as a preparation for applying their HOTS knowledge in secondary school which, in turn, supports their overall growth and achievement.

VII.   CONCLUSION

The implementation of Higher Order Thinking Skills (HOTS) in education is undeniably important in shaping the holistic development of Level Two pupils in primary schools, which encompasses the intellectual, emotional, and social aspects in a balanced manner. HOTS enables the development of pupils who are capable of thinking critically, creatively, and reflectively in solving everyday problems and making rational decisions in various situations (MoE 2019; Sidek & Mohamad 2021). Although many previous studies have focused on the implementation of HOTS by teachers and the level of pupils' acceptance and understanding of this concept,

there remains a lack of direct evaluation on the impact of HOTS on students' holistic development (Anida et al. 2020; Chrisitina & Rosmiza 2023; Nor Azlina & Tan 2022). In the context of primary education, student development is not only determined by academic achievement but also by the ability to apply moral values, soft skills, and proficiency in communication and collaboration with peers.

This study highlights the importance of teachers understanding and applying pedagogical strategies that align with the goals of HOTS, such as inquiry-based learning, constructivist theory, and collaborative approaches. These strategies not only stimulate higher-order thinking among pupils but also develop their capacity to function as 21st-century learners who can adapt to global changes (Zakaria & Liew 2021). Nevertheless, the implementation of HOTS still faces various challenges, including time constraints in planning student-centered lessons, insufficient continuous professional training for teachers, and lack of collaboration between school administrators and teachers in establishing a school culture that supports critical thinking (Bernard et al. 2021; Rahman et al. 2020).

The key implication of the findings of this study is the need for further research that explores in greater depth the relationship between HOTS application and students' long-term development. Such research is essential for designing more effective and sustainable teaching policies and practices, in line with the Malaysian Education Development Plan, which emphasizes the need to produce a generation of critical, creative, and innovative thinkers to meet the challenges of the 21st century (MoE 2013; Yunus & Hashim 2023). By strengthening the understanding of the impact of HOTS on pupils' comprehensive development, both educators and policymakers can build a more responsive and high-impact learning ecosystem.

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