Pegem Journal of Education and Instruction, Vol. 13, No. 3 , 2023 (pp. 337-349)

RESEARCH ARTICLE WWW.PEGEGOG.NET

Teachers' Self-Assessment of, and Perceptions on Higher-Order Thinking Skills Practices for Teaching Writing

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Abstract

Cultivation of students' higher-order thinking ability has become the main agenda of the education curriculum. The transfer of knowledge pertaining to higher-order thinking by teachers to the students can prepare the latter with the necessary attributes for the 21st century. The present study is aimed at exploring Malaysian secondary ESL (English as a Second Language) school teachers' self-assessment of, and perceptions on the higher-order thinking skills practices for teaching writing. Using a mixed-method research design, the validated 30-item five-point Likert scale questionnaire with an open-ended question was administered to a group of respondents consisting of 72 ESL teachers. The findings indicated that the overall mean score of ESL teachers' self-assessment of using higher-order thinking skills practices for teaching writing was at a high level. Meanwhile, their perceptions on the integration of higher-order thinking skills in the teaching of writing include the concern of students' low proficiency, difficulties in implementing HOTS in writing, poor participation by passive students, and teachers' attitude towards using HOTs for teaching writing. This study suggests that fostering and creating awareness of mastering the elements of HOTS can benefit both the teachers and the students. Teachers have to be creative and innovative in their teaching so that the students can be given the opportunity to showcase their knowledge, skills and abilities in the quest to imbue them with the 21st century life skills.

Keywords: Higher-order thinking skills; self-assessment; writing; ESL teachers; ESL students

Introduction

The current teaching and learning of English language scenario today demand teachers to integrate higher-order thinking skills (Carless, 2015). Teachers acknowledge their roles in preparing students to use HOTS which are the crucial components of 21st century learning. Teaching and learning become more challenging when teachers have to provide strategies to guide students to employ complex ways to reflect and think about what and how they are learning (Soo, Nor Haniza, Rohani, & Siti Nuur-ila Mat, 2015). Teachers need to strategize their pedagogical approach to elevate student thinking to an entirely new level (Tan & Halili, 2015). Therefore, teachers can no longer depend on traditional teaching methods to

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How to cite this article: Singh CKS, Tao H, Singh TSM, Tee TK, Ong ET. Maniam M, Gopal R, Hj Zaini MF. Teachers' Self-Assessment of, and Perceptions on Higher Order Thinking Skills Practices for Teaching Writing. Pegem Journal of Education and Instruction, Vol. 13, No. 3, 2023, 337-349

Source of support: None.

Conflict of Interest: Nil..

DOI: 10.47750/pegegog.13.03.34

Received: 08.03.2022

Accepted: 02.12.2022 **Publication:** 01.07.2023

teach writing. Traditional teaching methods limit students' exploration of thinking to understanding and regurgitating information learnt (Ngo & Yunus, 2021). In their study, Choy and Chaeh (2009) found that teachers express their anxiety as they lack the knowledge to cultivate the thinking skills among students. Teachers explained that they always ensure they embed the elements of higher-order thinking in the classroom but they also admitted they it was just merely targeting on the understanding level of the subject taught. The truth is that these teachers sometimes are unaware that had actually involuntarily embedded HOT in their teaching and learning process all this while (Zohar, 1999). Teachers view that it is simpler to 'come up with basic lessons that the focus is still on using textbook in to allow teaching to take place in the classroom' (Sparapani, 2009) which has conceded the amalgamation of HOT into the curriculum (Zohar & Schwartzer, 2005).

The Malaysian Education Blueprint 2013-2025, one of the aims is to ensure all Malaysians have equal access to quality education that will produce a knowledgeable, highly-skilled and united community. The aspiration to be a knowledgeable and highly-skilled nation, it will require and necessitate one to think creatively and critically. Based on the Malaysian Education Blueprint 2013-2025, the Ministry of Education Malaysia hopes to produce Malaysians who have equal access to nurture and develop brilliant students who are knowledgeable and highly-skilled at all stages. Critical and creative thinking is essential to be a knowledgeable and highly-skilled citizen.

Rajendran (1999) reported that educators in Malaysia are prepared to teach Higher-order Thinking Skills (HOTs) but they show very little pedagogical knowledge of HOTs. Another alternative introduced by the Ministry of Education to enhance mastery of HOTs among teachers was through the significant project known as the i-THINK Mapping. The main purpose of introducing i-THINK Mapping in Malaysian school was to assist the teachers to guide students to think critically in preparation for the future. Teachers in Malaysia refer to Bloom's Taxonomy as in how they can implement HOTs in their lesson. The most important learning domain in educational activity according to Bloom's Taxonomy is the cognitive (knowledge). Teachers in Malaysia refer to Bloom's taxonomy to shape their instructional strategies in order to assist students in acquiring higher order thinking (Singh et al, 2021; Rajendran, 1999).

Teaching students to model essays from examples when teachers instruct students to learn through memorization techniques will obstruct their critical thinking ability and problem-solving skills (Sunal et al., 1996). Students need to be exposed and taught how to comprehend the facts, deduce them and connect them to other related concepts. Hence, the teachers' role is not simply limited to teaching the English language per se. Instead, the role also entails guiding students beyond employing the knowledge and skills that the students have acquired so as to be able to evidence the ability to find correct solutions to daily problems. According to Mulnix (2012), curriculum plays a crucial role in developing students holistically to inculcate knowledge, values, skills and attitudes required to survive in the Information Age. Inculcation of HOTS in the Malaysian education system was given due emphasis from the 1990s. This means the education system in Malaysia experienced a radical transformation and was revamped to foster rational and analytical thinking. The main reason for this radical shift in the curriculum was to transform rote-memorization and superficial understanding of students' learning of concepts and relationships to a more sustainable ability to apply the knowledge they have mastered to real-life situations or problems (Ministry of Education, 2013; Rajendran, 2013). One of the emphases in the curriculum was to encourage critical thinking so that learners would be able to exhibit their cognitive abilities (Arthur & Phillips 2012; Malaysia, 2013). Malaysia participated in PISA assessment since 2009 and gained unsatisfactory results in PISA 2012. It was also reported a decline in scores and Malaysia trailed behind other South-East countries including Vietnam, Thailand and Singapore (OECD, 2014) despite the strive and effort to expand the education system. Malaysian students recorded below the OECD average with 421 mean score in mathematics, 398 in reading, and 420 in science literacy, respectively (OECD, 2014).

Instructors are entrusted to cultivate and foster HOTS in learners and they can implement this through the teaching of English. Additionally, the English language curriculum consists of themes that is directly linked to real-life situations and issues mainly concerning people and promoting higher order thinking (Singh et al., 2020). The various pedagogical approaches were adopted by the teachers in order to guide the students to employ thinking and find solutions. Teachers are cognizant of their roles in educating and preparing students to apply concepts and understanding learnt in the classroom to apply them outside of classroom context so that they can analyse problems, issues, search for alternatives, give solutions, synthesise information and implement those solutions in real-life situations (Rajendran, 2013). However, teachers still face anxiety when it comes to teaching a big group of classes, dealing with students with different learning needs and styles and life experiences (Felder & Brent, 2003).

Consequently, this study investigates ESL teachers' self-assessment of, and perceptions of HOTS practices for teaching writing in selected secondary schools in Malaysia. The teachers' self-assessment of, and perceptions on higher-order thinking skills practices for teaching writing can inform stakeholders and educators on the importance of the necessary knowledge, skills, values needed to nurture the growth of thinking skills, more aptly, the mastery of higher-order thinking skills. So, this study will answer the following research question:

What are the Malaysian teachers' self-assessment of, and their perceptions on higher-order thinking skills practices for teaching writing?

Literature Review

Higher-order Thinking Skills

Lewis and Smith (1993) divulged that higher order thinking skills encompass critical thinking, problem solving, decision making, and creative thinking. Dewey (1993) concurred that thinking takes time to develop, and as such, teachers must promote thinking by evoking in students certain issues, problems and questions or by some perplexity, confusion or doubt. In differentiating thought and thinking, Dewey (1993) reckoned that while thought is everything that comes to mind and that goes through our head, thinking, by contrast, is being conscious of a thing in any way whatsoever and that the thing is neither directly presented nor directly seen, heard, smelt or tasted. Therefore, the nature of the problem (or issue, or question) according to Dewey (1993), provides the end of thought, and the end controls the process of thinking.

Students need to be guided and taught to think and develop their own thinking abilities and process (Kauchak & Eggen, 1998). Higher-order thinking skills comprise creative thinking, critical, problem-solving, metacognitive, reflective and logical thinking. Students activate their HOTS when the teachers challenge them with questions, problems, and issues related to real-life situations (Sing et al., 2018; Singh et al., 2020). Once the students are able to analyze and investigate these issues, problems and conflicts, they would be able to exhibit proper decision-making abilities and propose solutions to the issues discussed.

Therefore, educators play a part in subsequently nurturing and raising students' thinking from lower order thinking skills (LOTS) to HOTS. Students' solutions to issues or problems would depend on how they develop from the LOTS. For learners to tackle the given problem or issue, they should activate their critical thinking ability, relate the problem or issue posed based on their prior knowledge and mastery of the subject matter. Singh et al. (2020) claimed that teachers' creativity and pedagogical approach can help elevate and boost students' thinking skills such as decision making, problem-solving, idea generation, comparing and contrasting, inferring and developing cognitive maps using i-Think Thinking maps. Students' ability and mastery of HOTS is vital as it complements 21st century demands. Therefore, teachers have to be equipped with sound knowledge on HOTS before they are able to transfer that knowledge among learners who would then be known as the future generation who possess the abilities to think creatively and critically, manipulate information, explore alternatives and make appropriate decisions.

Teaching writing using HOTS

Teaching writing can be a daunting task for teachers as it requires them to activate students' meta-cognitive abilities. This is supported by Zaky (2018) who mentioned writing is geared more towards students' ability to critically examine, select, articulate and organize the information they receive. Students are exposed to the English language at both the primary and secondary school levels and they are mandated to pass the English language in any major examination. Despite exposure to the English language for many years, learners show anxiety and inability to write (Singh et al., 2018). This is supported by many researchers (e.g., Ismail, 2011; Lau & Rahmat, 2014; Wang & Zou, 2018) who revealed that students experience apprehension and uneasiness when being instructed to write. Furthermore, the researchers mentioned that students lacked strategic writing and thinking skills.

Fareed, Ashraf, and Bilal (2016) proposed the need for teachers to embed HOTS to ensure students gain confidence and motivation to write. Implementing HOTS for teaching writing guides the students to write based on proper planning, strategies and techniques that can promote thinking (Rajendran, 2013). Teachers are aware that writing skill is difficult to teach and cannot be neglected as one of the crucial skills for language production (Karaca & Uysal, 2021). Teachers have to find strategies to ensure students write logical, well-structured, cohesive, stimulating essays covering good vocabulary and writing mechanisms (Jacobs et al., 1981; Hall, 1988). Nevertheless, students often get demotivated and lose confidence because good essays require proper construction of sentences, grammar and syntax, which may somehow be the reason why writing is always neglected. Hence, teachers must find ways to ensure the development of this skill is emphasized and given substantial consideration. Writing is known to be one of the difficult cognitive activities (Nunan, 1989) that demands the students to regulate over external factors. These factors include students' academic achievement, personal learning style, cognitive and linguistic ability (Dar & Khan, 2015; Haider, 2012).

Effects of HOTS on writing skills

It is very important to educate and nurture students with the 21st century skills they require when facing the critical demands of globalization (Ganapathy & Kaur, 2014). Thus, teachers play the key role to prepare students with these skills needed for them to face the demands of a competitive global labor market. Teachers can embed HOTS through learning tasks to activate students' creative and critical thinking abilities when they teach writing specifically. Ganapathy and Kaur (2014) looked into the influence of HOTS in a secondary school. Their study examined HOTS employed by the students in writing classes. Some 120 students in the sample were

exposed to both project and group-based activities without the support of teachers but they worked collaboratively with their peers during the English lessons. The study found that the learners were more engaged in learning and had opportunities to experience learner autonomy. The students were able to develop and produce cohesive writing and improved their communication skills. This study implicates those HOTS in ESL instruction specifically for teaching writing has a positive impact in terms of assisting students to improve in writing. Although known fact about learning English specifically mastering writing can be very difficult among ESL and ESL students (Abbad, 1988; Abdel-Latif, 2007; Abu Shawish & Atea, 2010; MacIntyre & Gardner, 1989; Rabab`ah, 2005; Singh, et al., 2020), Hillocks (1986) contended that continuous efforts by teachers to guide and nurture students' self-regulatory learning and collaboration can facilitate positive learning and thinking abilities.

EFL teachers' teaching, attitudes and problems

Singh et al. (2020) carried out a study investigating ESL teachers' strategies to foster HOTS for teaching writing to a group of weak ESL learners in Malaysian secondary schools. The findings indicate that some of the selected strategies to foster HOTS were explaining to students why they need to learn and master HOTS, stating general procedures required to employ HOTS, guiding students to connect concepts and ideas, helping students to predict and infer based on real-life situations, and using graphic organizers to help facilitate their thinking abilities. Most importantly, the findings expose the students to internalise HOTS strategies so that they are able to apply them to face challenges or questions posed. Discussion on i-Think Maps was explained clearly as to how students can use these maps to facilitate their thinking.

Zuraina (2018) finds that the students need to use a tool to help them think effectively for writing. This is further supported by numerous studies that nurturing students' HOTS is known to be the utmost purpose in education (Ganapathy et al., 2017; Mazer et al., 2008; Rezaei et al., 2011). Students would be able to activate their HOTS when teachers employ creative learning tasks that would spark and exert their thinking to a higher level (Zohar, 2013). Teachers can tap into students' lower-order thinking ability from comprehension before they guide students to a higher level of thinking comprises application, analysis, synthesis and evaluation tasks.

Teaching method to infuse higher-order thinking skills

Teachers can employ creative and innovative teaching methods into their pedagogical approach to infuse HOTS among students. First, teachers can guide students toward exposure to problem-solving skills. When teachers are able to put students into problem-solving situations, then students would activate their ability to infer when offering to solve the given conundrum (Alaa et al., 2020; Mohd et al., 2016). Additionally, Tiew and Abdullah (2019) in their review paper reported that most of the students exhibit lower-order thinking skills for writing and this was due to teachers' employing traditional teaching method whereby students were not given an opportunity to express and communicate with peers. Findings by Tiew and Abdullah (2019) support the findings by Musa et al. (2012) who reported that students did not perform well in writing because they were mainly influenced by teachers who employed a teacher-centred approach for teaching writing. Therefore, students did not get the chance to practice and activate their HOT when attempting to write.

Problems faced by undergraduates in writing

At the tertiary level, Al-Badi (2015) researched the difficulties undergraduates encountered in writing. Al-Badi (2015) showed that students could not write cohesively as they lacked the understanding on how to plan, draft, revisit or redraft and edit their work (Harmer, 2007). According to Stanny (2016), students can be guided to perform better in writing if they are given an opportunity to apply verbs stipulated in Bloom's taxonomy based on levels of thinking.

Fostering HOTS among weak ESL learners

Ganapathy and Kaur (2017) conducted a study that gauges students' perceptions of HOTS questions in English writing. The study focused mainly on lower secondary students' strategies to write descriptive writing based on Bloom's taxonomy. Results reveal that students enjoyed and performed better besides relating well to six levels in Bloom's taxonomy. A similar study but with different participants was conducted by Sham (2016) to look at how Bloom's taxonomy facilitated adult students' writing and critical thinking skills. The results show that proper guidance of the HOTS could help the adult students to develop sound ideas for writing.

Analyses of related prior research studies revealed that most of these studies were merely concerned with (a) effects of HOTS on writing skills, (b) using Frangenheim's Thinking Skills Framework (TSF) to facilitate tertiary students' academic writing ability, (c) EFL teachers' teaching writing practices, their attitudes and problems towards EFL writing skills, (d) ESL teachers' strategies to foster HOTS for teaching writing to a group of weak ESL learners in selected secondary schools, (e) problems faced by undergraduates in writing, students' perceptions of HOTS questions in English writing at the lower secondary school level and (f) problems faced by students in writing good and cohesive essays. Less attention was in developing an understanding of how teachers self-assess their own HOTS practices for teaching writing. This study aims at identifying how teachers assess their own implementation

of HOTS practices in the writing classroom. Also, this study probes further into teachers' problems and challenges that impede the fostering of HOTS for teaching writing.

Methods

Research Design

This study adopted a mixed-method design (Creswell & Plano Clark, 2011). Mixed method research design was selected as it allows and provides a more comprehensive finding (Creswell & Creswell, 2018). Data collection involved one 5-point Likert-scale questionnaire distributed through Google form. One open-ended question was attached to the questionnaire. The questionnaire comprised 30 items for the respondents to select answers ranging from "Strongly Agree" to "Strongly Disagree".

Respondents

The population for this study comprised ESL teachers from the secondary schools in one selected district in Malaysia with the total population of 117 ESL teachers. The respondents were selected based purposive sampling as these were the teachers who have the knowledge and experience implementing self-assessment and HOTs for teaching writing (Creswell, 2013). While the questionnaire was administered via online to all the ESL teachers in the district, only 72 responded. Hence, the response rate was 62% which is adequate according to Creswell (2014) who stated that a response rate of 50% is adequate for a survey research.

Instrumentation

For data collection, the researchers used two research instruments namely a questionnaire and an open-ended question. The questionnaire administered in the study was based on past studies by Mustapha (1998), Bloom and Krathwohl (1984) and Fullan (2007). A total of 30 items, with a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) were adopted for the online questionnaire which aims to elicit ESL teachers' self-assessment of using and implementing HOTS for teaching writing.

The questionnaire was piloted with a group of 25 Malaysian ESL teachers from another district which was not used in the main study. The data from the pilot study was analysed for its reliability by means of Cronbach's alpha using the software IBM SPSS Version 26, and the value attained was .85. According to Vaske et al. (2017), the Cronbach alpha's value should be more than or equal to .8 (≥ .8) to show good internal consistency.

Meanwhile, an open-ended question was crafted at the end of the 30-Likert-scale-item questionnaire to uncover ESL teachers' views on teaching writing using HOTS and the problems they encountered when integrating HOTS for teaching writing specifically in a secondary school setting.

Data Collection Procedure

The survey was administered using the Google form link. Survey research design allows the researchers to administer a survey to a sample or to the whole population to look at the opinions, behaviours and attitudes (Creswell, 2012). The link was shared through WhatsApp with all the ESL teachers who have been teaching English in the Malaysian secondary schools within the identified district. Teachers can access the Google link's form easily as it is known as one of the most convenient modes of communication for online social application. The data obtained from the Google link's form were then analyzed descriptively and thematically.

Data Analysis Procedure

The questionnaire data were analysed using the IBM software SPSS Version 26. Data were analyzed for descriptive statistics namely the means, frequencies and percentages based on the Likert scale questionnaire (Creswell, 2013. The responses from the open-ended question were analyzed thematically, categorising the responses into themes and sub-themes.

Findings

This section discusses the findings obtained from two sources namely the survey and the open-ended question. This study used a mixed-method research design aimed at identifying secondary school ESL teachers' self-assessment of, and perceptions on using HOTS for teaching writing. The quantitative data results were meant to answer the following research questions: What are the Malaysian Secondary ESL teachers' self-assessment of, and perceptions on using higher-order thinking skills for teaching writing? A total of 72 teachers responded to the online survey questionnaire. Findings were tabulated using means and standard deviations to better exemplify the data as shown in Tables 1 and 2. Findings gleaned from the qualitative data were coded and analyzed thematically as shown in Table 3.

From the analysis as shown in Table 1, items 1-20, which taken together, measures ESL teachers' self-assessment on their knowledge on HOTS. The overall mean score of teachers' self-assessment on their knowledge of using HOTS practices for teaching writing was 4.00, which is perceived as a high level of self-assessment. The means of the items in Table 1 ranged from 3.35 to 4.38, which according to Ibrahim et al. (2015) is considered discreetly high to high. The highest mean obtained is 4.38 by Item 11 whereby the teachers' self-rated that their knowledge about the proper planning in teaching writing using HOTS.

Table 1: Means and standard deviations of teachers' self-assessment of knowledge on higher-order thinking skills practices for teaching writing

Item		*Mean*	*Std. Deviation*
1	I have to embed higher-order thinking skills for teaching writing.	4.14	.84
2	I see the importance of integrating higher-order thinking skills for teaching writing.	4.31	.64
3	I can relate to the importance of implementing HOTS for teaching writing now for the future.	4.13	.73
4	I am clear about the higher-order thinking skills goals for teaching writing.	4.01	.86
5	I think writing becomes easier when students activate their higher-order thinking skills.	4.25	.80
6	I am clear about what I should do differently in implementing higher-order thinking skills for teaching writing.	3.90	.92
7	I am able to follow a clear guideline related to higher-order thinking skills.	3.88	.99
8	I can teach writing easily using higher-order thinking skills.	3.79	.96
9	I can see improvements in student writing after they used higher-order thinking skills.	3.94	.80
10	I can understand the concepts of higher-order thinking skills for teaching writing.	3.86	.91
11	Teaching writing using higher-order thinking skills requires proper planning.	4.38	.76
12	The preparation time for higher-order thinking skills is necessary to generate quality teaching for writing.	4.33	.82
13	High quality training materials in HOTS (print, video, electronic) are provided.	3.35	1.13
14	The Ministry of Education established a highly interactive infrastructure of 'pressure and support' in implementing higher-order thinking skills for teaching writing.	3.39	1.15
15	I follow the learning standards of the lesson to design writing activities using higher-order thinking skills.	3.75	1.06
16	I use media/tools/aids/materials to assist students in understanding higher-order thinking skills for teaching writing.	3.90	.91
17	Higher-order thinking skills enable students to construct knowledge both inside and outside of class for writing.	4.19	.76
18	Higher-order thinking skills reverse the role of students from passive learners to active participants.	4.22	.74
19	Higher-order thinking skills have the potential to facilitate active learning for writing.	4.18	.79
20	I always ask students to make inferences by giving them "real-world" examples for teaching writing.	4.14	.94
	Teachers' self-assessment of using HOTs practices for teaching writing	4.00	.62

Table 2: Means and standard deviation of teachers' perceptions towards implementing Higher-Order Thinking Skills (HOTS) for teaching writing

Item		*Mean*	*Std. Deviation*
21	I can use HOTS to improve my students' writing performance.	4.01	.85
22	I allow students to formulate a thesis statement for essay writing on their own using HOTS.	3.90	.88
23	I can reduce memorization and recalling of facts when I teach writing using higher-order thinking skills.	3.79	.87
24	I can provide more opportunities for students to participate in group work using higher-order thinking skills.	4.10	.79
25	I can challenge the students with probing questions for teaching writing using higher-order thinking skills.	3.85	.83
26	I encourage students to ask more questions for teaching writing using higher-order thinking skills.	4.13	.80
27	I encourage students to think and act independently when I teach writing using higher-order thinking skills.	4.11	.76
28	Through the teaching of writing using HOTS, I encourage students to make decisions and propose new solutions to problems.	4.06	.79
29	I give the opportunity to the students to criticize their peer's responses through the teaching of writing using HOTS.	4.08	.82
30	I give the opportunity to students to use a step-by-step method for solving problems through the teaching of writing using HOTS.	4.07	.78
	Teachers' perceptions towards implementing higher-order thinking skills for teaching writing.	4.01	.68

Table 2 shows items 21-30, which taken together, measures ESL teachers' self-assessment of implementing HOTS. The overall mean score of teachers' self-assessment of implementing HOTS for teaching writing is 4.01, which is considered as a high level of self-assessment. The individual items were viewed and measured as high, ranging from 3.76 to 4.11 based on the scale proposed by Ibrahim et al. (2015). The highest mean obtained is 4.11 by Item 27 whereby the teachers' self-rated highly that they do encourage their students to think and act independently when they teach writing using HOTS.

Meanwhile, Table 3 illustrates selected excerpts from the open-ended question obtained from 72 participants. All the 113 participants who participated voluntarily in the survey also answered the open-ended question which was added to the 30-Likert-scale items. The selected excerpts from their responses were first coded and analysed thematically. The codes were then divided into main themes and sub-themes. At the end of the participant's excerpt, [Tn] where n is a number denoted to a particular ESL teacher, is written to indicate the nth ESL teacher. As shown in Table 3, five major themes have been extracted in relation to teachers' perceptions of their practices of using HOTS for teaching writing. The themes include proper planning of HOTS, benefits of HOTS, teaching approach, HOTS viewed as a new dimension to thinking to

Table 3: Selected excerpts from the open-ended question

What do you think about teaching writing using higher-order thinking skills?		
Themes	*Sub-themes*	*Selected excerpts*
Proper planning of HOTs	Preparation by the teachers (shared by 8 participants, 11%)	(a) a good approach but needs proper and detailed preparation. [T7]
		(b) Have to prepare good teaching materials so that students will be more prepared towards the HOTS writing lesson. [T65]
		(c) Proper planning based on learning standards/curriculum can create more opportunities for students to write. [T72]
		(d) If you have the right set of students, you will definitely achieve HOTS objectives. The writing will progress smoothly with beautiful continuality from the thesis statement. [T19]
		HOTs need to be fine-tuned and started at the pre-school level so that the students can be guided from time to time. [T3]
		It is an interesting way of teaching if teachers have a full understanding of how to use HOTS in their teaching. [T36]
	Teachers' mastery of HOTs (Shared by 6 participants, 8%)	(e) It is an interesting way of teaching if teachers have full understanding how to use HOTS in their teaching. [T36]
		(f) a good approach but needs proper and detailed preparation [T50]
		(g) Will be useful in my future teaching. [56]
Benefits of HOTS	Promote real-life learning (shared 10 participants, 13.8%)	(h) Students are able to connect real problem with their writing. [43]
		• It is the way forward as we want more thinkers than merely follow who just regurgitate what is read. We want creativity sparked by HOTS. [T51]
		• Students able to connect real problem with their writing. [T42]
		• Agreed but need more examples and self-experience to guide the students. [T72]
	Promote independent learning among students (shared by 2 participants, 2.7%)	• It encourages students to be more independent, plays active parts in discussion and use technologies in order to produce high quality essays. [T3]
		• It trains students to be able to write independently on broad subjects. [T23]
	Promote critical and creative thinking among students (shared by 20 participants, 27.7%)	• It is important in helping students to be more creative in their writing. [T8]
		• It helps students to think critically and creatively. [T11]
		• It's very important for the student to think out of the box. [T19]
		• It does make students think from a different perspective. [T29]
		• It allows pupils to think creatively and critically and learn independently. [T32]
		• Makes them think outside the box, from all perspectives. [T37]
		• Students can improve their writing in terms of creativity, to make their essays more interesting and creative. [T45]
		• Um, it can make student think creatively and willing to explore.
		• [T47]
		• Learners need to be trained in critical thinking because this will enable them to give opinions and suggestions when they write essays. [T71]

Themes	*Sub-themes*	*Selected excerpts*
Teaching approach	Promote motivation and confidence among students (shared by 1 participant, 1.4%)	• Motivate students to take part in class activities. [T35] • Prepare students to be more confident. [T64]
	Pedagogical approach (shared by 3 participants, 4.2%)	• It is an excellent approach to teaching students to improvise their writing skills. [T25] It's a suitable strategy for good pupils. [T26] Good approach and better understanding. [T68]
HOTs viewed as a new dimension to thinking to develop student's writing skills	Promote creativity in writing (shared by 1 participant, 1.4%)	It is important in helping students to be more creative in their writing. [T8]
	Develop ideas for writing (shared by 3 participants, 4.2%)	It can develop students' ideas and increase their interest in writing. [T9] Interesting and activates students' abilities to write better. [T16] Good. A must have/do. The first order in the house is to get the students to start writing then organising ideas, playing around with words etc. and to love writing. [T44]
Constraint to integrate HOTs	Students' low proficiency (shared by 5 participants, 6.9%)	Challenging for low proficiency learners. [T6] It's a suitable strategy for good pupils. [T26] I think it's effective for good pupils but not so for low proficiency pupils. [T34] Too difficult for weak students as they do not have the language. [T40] Appropriate for students who are well versed in the language. [T41]
	Difficult to implement HOTs for writing (shared by 2 participants, 2.7%)	Kind of difficult to implement this to students as they don't like to think especially when it comes to writing. [T39] Quite challenging. [T61]
	Poor participation by passive students (shared by 2 participants, 2.7%)	Excellent ideas but difficult to implement due to students' participation being very low. [T66]
	Teachers' attitude (shared by 7 participants, 9.7%)	Almost negligible among the younger teachers as they are overly dependent on existing textbooks. Teachers should use real-life experience by showcasing the processes involved in writing and where the higher order thinking skills come in. That means, be a model and write, not just take written texts that come from books. [T70]

develop student's writing skills and constraints in integrating higher-order thinking skills.

Five main themes were extracted based on the open-ended question answered by the participants. The first theme is proper planning of HOTS and it has two sub-themes, namely teacher preparation (shared by 8 participants, 11%) and teachers' mastery of HOTS (shared by 6 participants, 8%). The second theme represents the benefits of HOTS with four sun-themes respectively, namely to promote real-life learning (shared by 10 participants, 13.8%), promote student independent learning (shared by 2 participants, 2.7%), promote student critical and creative thinking (shared by 20 participants, 27.7%) and promote student motivation and confidence (shared by 1 participant, 1.4%). The third theme is on teachers' perceptions of HOTS as one of the teaching approaches with its sub-theme being pedagogical approach (shared by 3 participants, 4.2%). The fourth theme is higher-order thinking skills viewed as a new dimension to thinking to develop student writing skills and it has two sub-themes namely, promote creativity in writing (shared by 1 participant, 1.4%) and to develop ideas for writing (shared by 3 participants, 4.2%). The fifth and last theme groups the constraints in integrating HOTS, encompassing four emerging sub-themes, namely students' low proficiency (shared by 5 participants, 6.9%), difficult to implement HOTS for writing (shared by 2 participants, 2.7%), poor participation by passive students (shared by 2 participants, 2.7%) and teachers' attitude (shared by 7 participants, 9.7%). The participants of this study are cognizant of HOTS advantages which is also one of the main themes and it has further been categorised as one of the sub themes, that is to promote student critical and creative thinking (shared by 20 participants, 27.7%) which appeared to be the most recurring significant perception.

Discussions

As shown in Table 1, most teachers concur that *'Teaching writing using higher-order thinking skills requires proper*

planning' (M = 4.38, SD = .76), which indicates teachers are aware of, and have the knowledge about infusing HOTS in instruction that requires proper planning including adhering to the learning standards and preparing the materials so that the students can participate in the tasks step-by-step. The data are supported by the participants' responses obtained from the open-ended question under the sub-theme 'Preparation by the teachers' as shared by 8 participants (11%). T7 wrote "*a good approach but needs proper and detailed preparation"* and T65 explained that "*Have to prepare good teaching materials so that students will be more prepared towards the HOTS writing lesson."* The findings obtained from the survey and open-ended question are supported by past studies (Ganapathy & Kaur, 2014; Kaplan et al., 2002; Singh et al., 2020) that teachers' proper planning and materials preparation are able to engage students in learning and ensure teachers achieve the learning standards planned for instruction.

The item *'I see the importance of integrating higher-order thinking skills for teaching writing'* as in Table 1 obtained the second highest mean score (M = 4.31, SD = .64). Educators know how significant integrating higher-order thinking is for teaching writing as students need to activate their ability to analyze, infer and predict when developing critical ideas to generate their essays. This is supported by the open-ended data obtained under the sub-theme "*to develop ideas for writing"* in which T9 divulged that *"It can develop students' ideas and increase their interest in writing",* T16 mentioned that *"Interesting and activates students' abilities to write better",* and T44 shared that *"Good. A must have/do. The first order in the house is to get the students to start writing then organising ideas, playing around with words etc. and to love writing."* This is supported by Fareed et al. (2016) that teachers must embed HOTS to ensure students gain confidence and motivation to write. Implementing HOTS in teaching writing guides the students to write based on proper planning, strategies and techniques that can promote thinking (Rajendran, 2013).

The item *"High quality training materials in HOTS (print, video, electronic) are provided*" had the lowest mean score (M = 3.35, SD = 1.13) and this is viewed as a discreetly high level of perception. Not all the teachers have access to high quality training materials in higher-order thinking skills. The dearth of resources and materials for instruction and teaching of thinking is a challenge many teachers face today. Exposing students to the teaching of thinking would involve tasks and techniques that can assist and inspire thinking including permitting discussions that would warrant the use of the materials. This finding is supported by the qualitative data shared by the participants based on the open-ended question, under the sub-theme, "*difficult to implement HOTs for writing".* T39 said *that "Kind of difficult to implement this to student as they don't like to think especially when it comes to writing"* while T61 mentioned it was *"quite challenging".* However, according to Ramasamy et al. (2016) teachers' interest and knowledge on HOTS based on the discipline taught and grouping of schools showed that lack of materials and resources seem to be the main problems for teachers to implement HOTS more successfully. The study also reports that lack of quality training materials in HOTS influences teachers' preparation of developing lessons geared toward HOTS teaching in the classroom.

Table 2 reveals that most of the teachers agreed with the item *"I encourage students to ask more questions for teaching writing using higher-order thinking skills"* (M = 4.13, SD = .80). Teachers must infuse more questions to ensure effective implementation of HOTS so that learners can transform their knowledge into interesting ideas to expand on and write in their essays. Ganapathy and Kaur (2014) have adapted Frangenheim's (2006) model that guides students to take ownership of their learning. Frangenheim's (2006) model spells out clearly the learning outcomes planned by the teacher through a set of questions and tasks to be used to teach and guide students' thinking based on the cognitive levels of Bloom's taxonomy. The qualitative data under the sub-theme, *"Promote critical and creative thinking among students",* which was expressed by 20 participants, supported the model. T71 mentioned that *"It is important to train students to think critically because this will enable them to give opinions and suggestions when they write essays",* and T47 shared that higher-order thinking skills *'Um, [they] can make student think creatively and willing to explore".* This data is supported by past studies (Ganapathy et al., 2017; Mazer et al, 2008; Rezaei et al, 2011; Singh et al., 2020) that show teachers' questioning strategies to foster HOTS can be strengthened by providing more activities for students to activate their thinking from the lower level, starting from comprehension, before moving to higher cognitive level tasks.

In Table 2, *"I can reduce memorization and recalling of facts when I teach writing using higher-order thinking skills",* had the lowest mean score (M = 3.85. SD = .87). This is probably because teachers have tried their best to move away from employing traditional teaching method for teaching and learning but because students are still influenced and feel very comfortable learning by regurgitating information due to the examination-oriented system could be the reason for this lowest mean score which is still viewed as a high level of perception (memorization and recalling of facts). The data is additionally supported by responses to the open-ended question, under the sub-theme *"Promote real-life learning"* which was mentioned by 6 participants (8%) as shown in Table 2. One of the teachers, T51, shared *"It is the way forward as we want more thinkers than mere followers who just regurgitate what is read. We want creativity sparked by HOTS".*

In addition, T25 (see Table 6) shared that *"It is an excellent approach to teach students to improvise their writing skills".*

Infusing HOTS into instruction for teaching writing is viewed as an excellent approach that could benefit the students. This is supported by other researchers (e.g., Ganapathy & Kaur, 2017; Hasibuan et al., 2021; Singh et al., 2020; Yusoff & Seman, 2018) who found that teachers can assist students to transfer their ideas through questioning strategies, mind-maps or visuals. According to Lidawan (2019), teachers who integrate higher-order thinking skills can use mind-maps to tap into students' creative and critical thinking skills link that would guide them to connect ideas for writing. Bassham et al. (2012) shared their views on the importance of exposing and guiding students on Higher-order thinking skills which they can use to critically develop, support, evaluate and make judgments on topics discussed.

As can be seen in Table 2, "*I can challenge the students with probing questions for teaching writing using higher-order thinking skills",* scored the second lowest mean score (M=3.85, SD=.83), which is also as one of the high perceptions. A study carried out by Ganapathy and Kaur (2014) revealed that students who get the chance to work in projects and group-based tasks are able to write confidently. This is because when the students are placed into groups, they can activate their thinking skills and share their opinions with one another. The students also get to experience learner autonomy and take charge of their own learning. By doing so, they are able to research and search for more information on the writing topic assigned to develop their writing skills, and this is supported by past studies that witnessed students' motivation and confidence towards learning (Pillay et al., 2020; Prastyo et al., 2020; Retnawati et al., 2018; Salikin et al., 2017; Tan & Halili, 2015; Zaky, 2018; Zohar, 2013). Findings from these past studies confirm that teachers' ways of probing questions for teaching writing create abilities in students to be able to move from comprehension to the higher level of thinking to improve writing.

Writing tasks can facilitate understanding of topics, development of thinking and also foster creative and critical thinking skills. Teachers' strategy of probing questions for teaching writing can motivate the students to share and present their views whereby they connect concepts and ideas in writing. This is further supported by the sub-themes (see Table 6): *"Promote critical and creative thinking among students",* shared by 20 participants (27.7%). Examples, *"It allows pupils to think creatively and critically and learn independently"* [T32], *"Makes them think outside the box, from all perspectives"* [T37] and *"It is important to train students to think critically because this will enable them to give opinions and suggestions when they write essays"[T71].* Generally, teachers concur that challenging students by probing questions for teaching writing using HOTS will help students develop critical thinking. Past studies showed that teachers agree with their role in familiarizing and exposing students to HOTS through various classroom practices to activate student ability to evaluate, analyze, judge, critique and infer (Ganapathy & Kaur, 2014; Mohamed & Lebar, 2016; 2017; Lu et al., 2021; Singh et al., 2020; Yee et al., 2012).

Another main theme emerging from the open-ended question was on *"Constraint to integrate HOTs",* that was further divided into four- subthemes namely *"Students' low proficiency"* shared by 5 participants, 6.9%, *"Difficult to implement HOTs for writing"* mentioned by 2 participants (2.7%), *"Poor participation by passive students"* shared by 2 participants (2.7%), and *"Teachers' attitude"* shared by 7 participants (9.7%). Findings showed that teachers do not just gain the benefits of exposing students to higher-order thinking skills but they also face constraints in implementing them. Teachers are aware of the need to expose students to 21st century skills and that HOTS are an important component of the 21st century skills (Pellegrino & Hilton, 2012). Higher-order thinking skills are important skills students can use as a tool to survive in the global job market. These are almost negligible among the younger teachers as they are overly dependent on existing textbooks. As mentioned by T70, *"Teachers should use real-life experience by showcasing the processes involved in writing and where the higher order thinking skills come in. That means, be a model and write, not just take written texts that come from books",* this shows that teachers still favor the traditional teaching method and do not expose students to methods that tap into their thinking skills. This finding is supported by past studies on teachers' preferences using the traditional method to teach, create less opportunity for students to take part in problem-solving activities, preparation of tasks that require students to exhibit their understanding and lack of knowledge on ways to foster HOTS in the class (Aziz @ Ahmad et al., 2017; Dewitt et al., 2016; Krishnan, 2014; Latief et al., 2018; Row et al., 2016; Singh et al., 2020). While the teachers generally showed a great level of self-assessment and perceptions towards implementing higher-order thinking skills for teaching writing, nevertheless they also revealed some concerns as shown in Table 3. Teachers in this study can refer to Bloom's Taxonomy as a guideline to share their instructional and questioning strategies. Teachers can do this by referring to a list of verbs in Bloom's Taxonomy. The questioning strategies employed based on Bloom's Taxonomy can be useful for teacher to strategize their teaching beginning from the lower-order thinking skills progressing to the higher-order thinking skills. Bloom's Taxonomy is appropriate in terms of facilitating teachers to design questions and classroom activities to promote critical and creative thinking skills (Larkin & Burton, 2008).

Conclusion and Implications

The current study was carried out to investigate teachers' self-assessment and perceptions towards implementing HOTS for

teaching writing. The quantitative results showed a high level of self-assessment of, and perceptions on HOTS practices among the ESL teachers. Responses to the open-ended question and excerpts shared by the teachers showed some significant benefits teachers witnessed when they implement HOTS in teaching writing namely, proper planning of HOTS, benefits of higher-order thinking skills, teaching approach and HOTs viewed as a new dimension to thinking to develop student's writing skills. However, teachers shared some of the constraints related to HOTS implementation such as students' low proficiency, difficulty in implementing HOTS for writing, poor participation by passive students and teachers' attitude to teaching using the traditional method.

Despite the challenges teachers face to implement higher-order thinking skills, teachers can still infuse higher-order thinking skills through their teaching and learning activities to ensure students are exposed and given the opportunity to showcase their abilities and knowledge to prepare them with 21st century life skills. Teachers can be resourceful and employ different teaching strategies to cultivate HOTS to promote student creativity and problem-solving skills. Proper planning and development of interesting lessons can assist teachers to impart higher-order thinking skills. Teachers can embrace ICT and develop lessons that incorporate activities which challenge students' thinking from lower to higher order based on students' cognitive abilities. One limitation of this study is that it focused on secondary ESL teachers. For future research, it is recommended to get more teachers from diverse population in order to obtain a true picture of teachers' views on higher-order thinking skills. It is also very crucial and significant to find out students' views on HOTS and how they show their mastery of HOTs with examples for language learning. This study concentrates on one district and nine schools tracing the teacher's implementation of self-assessment of, and perceptions on HOTs practices for teaching writing to improve student learning over time. However, the administration of the survey to the schools could only be arranged and distributed through Google form due to the pandemic that caused schools to be closed. Thus, the time duration for this study was beyond the control of the researcher.

Acknowledgement

We acknowledge with great appreciation the kind gesture of Baoji University of Arts And Sciences for providing the External Research Grant (Coded: 2020-0284-107-01) and Universiti Pendidikan Sultan Idris for managing the grant as well. Equally, we would like to express our gratitude to all the participating teachers for their willingness to share their understanding of self-assessment and perceptions of their higher-order thinking skills practices for teaching writing.

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