Case Study

ESL Teachers' HOT Pedagogical Practices via ICT: A Case Study

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ABSTRACT

Higher-order thinking skills (HOTS) are part of the Malaysia Education Blueprint 2013-2025, which was implemented into the school system to spark a new trend in the way young Malaysians learn and acquire knowledge. The aim of the study was to obtain greater insights into the teaching pedagogies of English as a Second Language (ESL) teachers. This study underlies various types of information and communication technologies (ICT) usages in the classes, examine ESL teachers' challenges in integrating ICT in their classes for promoting HOTS and determines the types of higher-order thinking (HOT) activities that are being conducted in classes. A purposive sampling method was used to select 40 participants who then responded to a questionnaire. The respondents comprised ESL teachers from selected secondary schools in Penang. This study found that ESL teachers lacked pedagogical knowledge of HOT especially in ICT and experience various ICT challenges in their pedagogical practices. This study is pertinent as it highlights a need for the Education Ministry to take serious measures in ascertaining experts in particular fields of pedagogical knowledge and provide training for the teachers to be capable of infusing thinking skills into content instruction.

Keywords: ESL teachers, higher-order thinking skills (HOTS), information and communication technologies (ICT), Malaysian education system, secondary schools

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INTRODUCTION

The advent of Malaysia's aspiration to highlight an education system that is able to compete globally, directing the country's focus to information and communication technologies (ICT) and innovations. Bingmilas (2009) stressed that ICT usage in classroom settings provided a significant edge for students to learn and thrive in the digital age. Hilbert (2015) asserted that the evolving nature of technology greatly improved social development. With the power of ICT, everyone possesses the potential to achieve considerable success (Barak et al., 2007). Technology gives rise to convenient communication methods. As schools have yet to advance from the industrial era, teachers have to update their teaching pedagogies to meet the 21st century standards (Bates, 2015).

Coherent instruction and assessment encourage active learning through numerous higher-order thinking skills (HOTS) activities (Reigeluth & Karnopp, 2013). Levin and Schrum (2013) discovered that the implementation of ICT in schools assisted teachers in producing effective teaching and active learning among students. Subran (2013) stressed that the major advantages of using ICT to promote HOTS were in the utilization of HOTS via pedagogical practices, which helped in terms of sharing, interactivity, and collaboration among students.

The preliminary report of the Malaysia Education Blueprint 2013-2025 highlighted that English teachers in schools did not sufficiently engage students in HOTS, as they were still more comfortable with the old school lecture format. A study by Ganapathy and Kaur (2014) discovered that teachers lacked pedagogical knowledge and the expertise to innovate their practices by integrating HOT skills in their lessons. Ganapathy and Kaur (2014) asserted that teachers should implement realistic contexts in various situations into classroom assessments and activities, as this would promote HOTS among students in the ESL classroom.

A significant percentage (60%) of public examination questions will soon test students' grasps of HOTS and this mandates teacher to equip themselves with HOT pedagogies (Ministry of Education, 2000). Brookhart (2010) stressed that HOTS emphasized on life beyond school. Time is required to promote HOTS in the ESL classroom, as it is more complex compared to lower-order thinking skills. However, teachers today have to change from their old-school lecture-based format into an actively engaging classroom with the students in order to promote HOTS, which can be made easier through ICT.

Teachers today should focus on scaffolding methods such as modelling, guidance, and hints to assist students in acquiring HOTS (Hassaskhah, 2011). ICT allows students to interact with one another effectively by encouraging convenient group discussions. In line with the sociocultural theory, teachers can assist students through ICT by engaging them through active learning environments. ICT enables students to actively search for answers themselves.

HOTS can be effectively taught in schools with the power of ICT as highlighted by Ali (2012) and Yee et al. (2015).

Therefore, this research attempts to address the following research objectives: to examine ESL teachers' usage of ICT to promote HOTS, in the English language classroom at selected secondary schools in Penang and to determine the challenges experienced by ESL teachers, when using ICT to promote HOTS in the English language classroom at selected secondary schools in Penang. In addition, the research questions of the study are: 1) To what extent do the ESL teachers use ICT to promote HOTS in the English language classroom at selected secondary schools in Penang?; 2) What are the challenges experienced by ESL teachers when using ICT to promote HOTS in the English language classroom at selected secondary schools in Penang?

Related Literature

Wastiau et al. (2013) discovered that many teachers were aware of application software including desktop applications, presentation software, internet applications, and media communication. In Wastiau et al.'s (2013) study, teachers gave positive reviews regarding the relevance and importance of ICT to facilitate students' critical skills. However, Wastiau et al.'s (2013) study did not provide insight into the challenges encountered by teachers throughout the process of using ICT in teaching.

In Nguyễn and Nguyễn's (2017) study, active discussion and sharing of ideas were found to be uncommon among students.

This scenario had resulted in many students failing to engage in HOTS, as they were only taught with traditional methods of teaching. The results of the study also showed that many students only possessed preliminary skills, as only the most active and intelligent students would complete most of the work by themselves or for their groups.

Ganapathy (2016) advocated that the Malaysian higher education system had significantly matured over the years. The surge in student enrolment, worldwide acknowledgement of research publications, patents, and institutional quality and intake of international students have directed the education system's focus into innovation, technology, critical skills, and real-world applications. The accomplishments can attest to the many innovations of the Malaysian academic community, the private sector's support and the profound contribution that the Government has made. Malaysia's commitment to providing a top-tier education propels the Ministry of Education's focus towards ICT and HOTS, ensuring that the country's education system is up to par with the elite countries. Globalized online learning and the current focus gearing towards ICT reinforced the country's education efficiency by facilitating solid grounds for students to actively acquire knowledge via the usage of ICT. Ganapathy's (2016) study is recent and the findings further supported that ESL teachers had not been able to effectively cope with the transition into the 21st century teaching pedagogies with ICT utilization. ESL teachers were found to be faced with several

challenges which prevented them from venturing into ICT dominant teaching styles.

Majumdar (2015) highlighted that ICT could transform the nature and process of the learning environment into a new culture. As ICT alters the teacher-centred learning into an interactive and engaging environment, ICT can effectively facilitate active learning, where students can utilize their knowledge and apply them in various situations and contexts. Majumdar's study is effective in displaying that learning is not mere knowledge transmission, but requires active construction. Learners have to undergo a paradigm shift from the old school method of teaching and learning into the student-centred active way of knowledge acquisition. Majumdar's (2015) study demonstrated that ICT encouraged HOTS acquisition and enabled students to construct knowledge more effectively. Majumdar's (2015) study elaborated on the recent paradigm shifts in education, demonstrating that teachers' professional development in ICT usage embodied and shaped the teaching pedagogies which teachers were able to apply in their classes. The study also discovered the changes in the learners' roles, curricula and delivery and the media applications.

Wheeliham's (2011) study discovered that creative and innovative students would thrive in the 21st century, as they had the capacity to adapt and create new opportunities. The 21st century requires the younger generation to master the application of HOTS in their daily lives. Sicilia (2005) highlighted that teachers faced many

challenges in using ICT during their lessons such as unloaded browser, no internet connection, and unfunctional computers or other equipment. In addition, according to Afshari et al. (2009), teachers are reluctant to use technology in their class.

Subran's (2011) article entitled "Developing Higher-Order Thinking with ICT", stressed on three major components of Web 2.0 which promoted interactivity among users. It is a platform allowing people to collaborate and share information online via blogs, wikis and Social Networks. Waycott et al.'s (2010) study entitled "Digital Divides? Student and Staff Perceptions of Information and Communication Technologies" discovered that most staff gave positive reviews towards ICT usage in enhancing learning and were highly well equipped with knowledge and skills on education technology while students did not have a special preference for increased integration of ICT in their studies. Subran's (2013) study also found that various HOTS were acquired by students via Social Networks, as it was very likely for students to develop HOTS, when they analyzed, evaluated and created new information based on their group work or other students' work. ICT tools enable students to create their own views and ideas based on their knowledge, experience, and influence from the comments of others. They may reflect on materials to appraise their suitability to the topic of concern and appraise comments from others to gauge their personal capabilities.

Zuraina (2009) conducted a study

named "A Case Study on Collaborative Learning to Promote Higher Thinking Skills (HOTS) among English as a Second Language (ESL) Learners" which aimed to examine the experience of UMP students in using collaborative learning to promote their higher-order thinking skills. From Zuraina's (2009) study, it was found that many class activities should be implemented with collaborative learning involving HOTS. HOTS activities necessitating students to produce invention at the synthesis level and reviewing their self- evaluation, were key elements to prepare students to thrive in the 21st century. The usage of ICT is able to provide numerous insights into students' critical thinking skills. Collaborative learning among students facilitates the acquisition of HOTS such as in activities involving comparing (analysis level), categorising (synthesis level) and explaining (evaluation level), where students are able to acquire and apply their knowledge in various contexts and situations. Social media and search engines enable teachers to facilitate group discussions among students easily.

Lorenzo (2016) stated that beneficiary schools faced significant issues in project implementation pertaining to ICT implementation in schools. Among the problems faced included hardware failure, the difficulty of software package usage, lack of follow-up on capability building, no available internet connection, restricted laboratory access, and shortage of repair/ maintenance of laboratory equipment. Lorenzo's (2016) study is relevant as his

research project demonstrated that teachers are satisfied with the administration, substance and the projection of ICT integration into the education system. While Lorenzo's (2016) study is significant in supporting the importance of ICT in education, further research is required to successfully address the gaps in ICT knowledge and pedagogical practices in schools.

Ganapathy and Kaur's (2014) study found that teachers did not have the necessary pedagogical knowledge for creating innovations in integrating HOTS in the classroom setting. Ganapathy and Kaur's (2014) study affirmed that teachers were not well-versed with HOT teaching pedagogies which in turn resulted in students performing worse in the HOTS packed examinations such as in PT3 and SPM. The drop-in top scorers for both examinations is an attestation that there is a loophole in ESL teachers' HOT teaching pedagogical practices and students' performance on HOT questions. This reveals that there exists a gap in the literature for HOTS implementation, as to whether ESL teachers are capable of teaching HOTS effectively. Thus, teachers are advised to teach in contexts, which highlight a few key areas. Among the focuses of HOT teaching are, forming background knowledge, classifying and separating information into groups, arranging items to ensure coherency and accuracy, forming a hypothesis, analysing various components and piecing them together and problem-solving activities. Students should be taught by the ESL teachers on the optimal ways to

analyse, classify or arrange the information.

Ganapathy and Kaur's (2014) study had shown that teachers played a vital role in updating their pedagogical practices by integrating subject matters with HOTS implementation. This is to facilitate students' engagement and attract their interest in engaging in the active acquisition of knowledge. Ganapathy and Kaur (2014) also asserted that teachers should ensure their assessments and classroom exercises incorporated realistic contexts and problems to promote HOTS acquisition among students. In short, teachers' own creativity plays a major part in how they engage students with HOT activities such as challenging existing beliefs and past information in order to cultivate the students' HOTS. From the results of the study, most students were interested and fascinated to use Facebook to actively search for information such as obtaining new knowledge by sharing and discussing among their friends. This discovery further reinforces that ICT has the power to promote HOTS in classroom settings, where students are provided with ample opportunities to actively search for information, analyse and evaluate the information found through the internet. After the active acquisition of information, students will then be able to create their own information and opinions, and thus, share with the class, by further highlighting active discussions in promoting HOTS with ICT.

Conceptual Framework of the Study

The conceptual framework (Figure 1) is based on three theories namely the Bloom's taxonomy, sociocultural theory, and constructivist approach. The teaching of HOTS via ICT in the ESL classroom highlights only the three main skills, namely analysing, applying and evaluating. The research answers whether ESL teachers agree or disagree with the introduction of HOT activities in classrooms via ICT.

The constructivist approach proposes that prior knowledge is necessary for meaningful learning, as active learning leads to actual knowledge acquisition. ESL teachers in secondary schools should teach students to apply their knowledge gained in schools in real-life contexts. As such, the ESL teachers' usage of ICT to promote HOTS is evidenced via the constructivist approach, further emphasising the ESL teachers' role in engaging students' interest to actively search for the information through ICT tools.

Vygotsky's sociocultural theory highlighted that the interaction between teachers and students of learning and teaching activities in schools plays an important role in HOTS acquisition, and such interactions can be easily conducted through ICT. More in-depth views of student-teacher interaction could be obtained via HOT activities and ICT tools.

MATERIALS AND METHODS

This study employed the quantitative approach where questionnaires were administered among ESL teachers. Forty ESL teachers were purposively selected
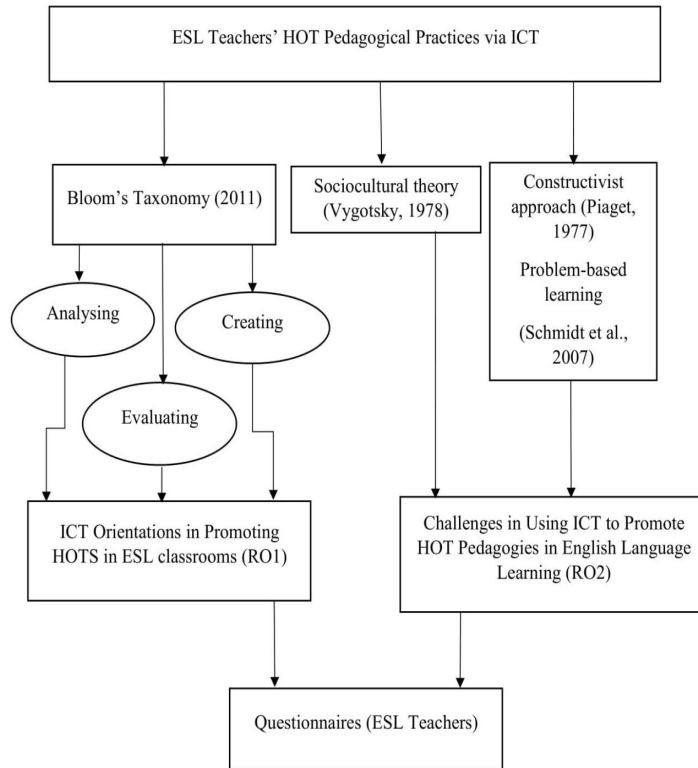
Figure 1. Conceptual framework of the study

for this study. The questionnaire was administered to the teachers and data were analysed. As for the study instrument, the questionnaire was adapted from Ganapathy et al.'s (2017) study due to its relevance towards the study. Further literature on HOTS and the importance of ICT were used to update and fortify the questionnaire with the base concept of Bloom's taxonomy of learning. The reliability of this study was validated through Cronbach's alpha test, with a 0.97 overall consistency score. Forty questionnaires are a good representative of the overall population of ESL teachers in Penang.

The study's research questions homed in on the understanding of the practices related to the Malaysian ESL secondary school teachers' perspectives regarding the utilisation of ICT in the teaching of English in schools in promoting HOTS. Descriptive statistics including frequency, mean score and standard deviation were produced through the Statistical Package for the Social Sciences (SPSS) Version 22. The quantitative findings provided a key understanding of the latest ESL teachers' HOT pedagogical practices via ICT. A reading of 0.861 was obtained from the Cronbach's Alpha reliability statistic, indicating reliable data.

Permission was first obtained from

the Ministry of Education to conduct the research in secondary schools, then the State Education Department approved the research to be conducted in schools in Penang. After the affirmation from the Education Planning and Research Division (EPRD), permission was obtained from the principals of the respective schools.

The school principals only permitted ESL teachers who had free periods at that time to participate in the questionnaires on a voluntary basis, due to the tight teaching schedules of ESL teachers. ESL teachers with less than 5 years of teaching experience were prioritised in this study.

Sampling

Purposive sampling is selected for the research to ensure the respondents are from similar backgrounds. The sampling of the study was narrowed down to a group of secondary school ESL teachers who had less than five years of working experience. The effectiveness of teaching HOTS using ICT was evaluated through the study, as the frequency of ICT tools used is calibrated. The challenges encountered by ESL teachers when teaching HOTS were also determined in the study. The results helped provide a picture of whether the ESL teachers are able to effectively deliver critical knowledge to the students.

Data Analysis

The ESL teachers were briefed by the researcher to answer the questionnaire items as truthfully as their responses are used as reliable data. The frequency of ESL teachers using ICT to teach HOTS was reflected in the data collected. The mean and standard deviation readings were analysed through SPSS format Version 22. The results of the study answer the research questions of the study which were to understand the practices of Malaysian ESL secondary school teachers' perspectives regarding the utilisation of ICT in the teaching of English in schools in promoting HOTS and to determine the challenges faced by ESL teachers in teaching HOTS via ICT. The data collected addresses the research objectives of the study by shedding light on the ESL teachers' usage of ICT to promote HOTS and the challenges faced while promoting HOTS via ICT in schools.

RESULTS

The types of ICT used by teachers and their frequency of usage were analysed in this study. Table 1 displays the preferred ICT tools by ESL teachers in secondary schools. Hypermedia/multimedia has the highest mean (3.18) among the collected data. The internet has the lowest mean at just 1.70 which means that most teachers agree that the internet is commonly utilized in classes. Desktop applications have the highest standard deviation, at 1.137 while the internet has the lowest standard deviation at just 0.853. The database has the second-highest mean at 3.00 but is the third highest in terms of standard deviation (1.038), behind desktop application (1.137) and digital telecommunication (1.062).

Table 2 analyses the usage of ICT

Table 1

Types of ICT tools preferred by ESL teachers

Types of ICT	N	Minimum	Maximum	Mean	Std. Deviation
Desktop application	40	1	5	2.13	1.137
Presentation software	40	1	5	2.25	1.032
Digital Telecommunication	40	1	5	2.53	1.062
E-learning portal	40	1	5	2.73	0.933
Web2.0	40	1	4	2.07	0.888
Internet	40	1	3	1.70	0.853
Hypermedia/ Multimedia	40	1	5	3.18	0.984
Database	40	1	5	3.00	1.038

Notes: 1= Strongly agree, 2 = Agree, 3 = Not sure, 4 = Disagree, 5 = Strongly disagree

in promoting HOTS activities. From 40 respondents, challenging existing beliefs has the highest mean (mean = 3.35) among all the HOTS activities being conducted through ICT. Group activities have the highest mean among all the HOTS activities being conducted through ICT. Engaging guest speakers had the second highest mean among the selected items, with a mean of 3.32. Interactive lectures have the highest standard deviation at 0.981 while the lowest standard deviation goes to relating information to the real world with a standard deviation score of 0.687.

From Table 3, data were collected on the challenges faced by ESL teachers in using ICT to promote HOTS. Teachers having no idea how to start in implementing ICT in their lessons has the highest mean at 3.08. On the other hand, poor internet connectivity has the lowest mean at just 1.70. For standard deviation, the difficulty for teachers to adapt to the new focus on ICT in promoting HOTS has the lowest standard deviation at 0.526. Poor internet connectivity has the highest standard deviation at 0.758 while lack in ICT skills and the lack of technology guidance, as well as the learning of HOTS without ICT, have a tied score at second-highest, with a standard deviation at 0.716.

DISCUSSIONS

The total population of ESL teachers cannot be precisely measured in this study but the findings from this study were able to provide an accurate representation of the current situation. The ESL teachers reported that they are aware of the importance of ICT but face difficulties implementing them into their classes. In short, teachers are still not well adept at adapting their pedagogical practices into HOTS focused practices via ICT.

The results of the questionnaires show

Table 2

Types of HOTS activities conducted by ESL teachers via ICT

Using ICT to promote HOTS activities	N	Minimum	Maximum	Mean	Std. Deviation
Case study	40	2	5	3.30	0.883
Brainstorming	40	1	4	2.28	0.816
Interactive lectures	40	1	5	2.75	0.981
Problem solving	40	1	4	2.55	0.815
Problem based learning (PBL)	40	2	5	3.05	0.846
Higher level questions	40	1	4	2.80	0.723
Reflection experience	40	1	5	2.28	0.847
Oral presentation	40	1	4	2.30	0.758
Group activity	40	1	4	2.15	0.770
Idea exploration	40	1	4	2.55	0.815
Sequence questions	40	1	4	2.55	0.876
Engage thinking beyond reading	40	1	4	2.78	0.733
Formulating hypothesis	40	2	5	3.18	0.874
Analyse critically	40	1	5	3.00	0.784
Synthesise information	40	2	5	3.18	0.712
Analyse functionally	40	1	4	2.90	0.841
Evaluate info	40	2	5	2.95	0.783
Creative thinking	40	1	4	2.50	0.751
Apply knowledge in new situations	40	1	4	2.37	0.774
Complete multifaceted tasks	40	1	5	2.47	0.816
Demonstrating creative thinking rewards	40	1	4	2.30	0.823
Formulate hypothesis rewards	40	1	5	2.83	0.813
Synthesis info rewards	40	1	5	2.78	0.920
Relate information to real world	40	1	4	2.70	0.687
Apply new skills in new contexts	40	1	5	2.95	0.714
Draw inferences	40	1	5	2.85	0.921
Answer assigned tasks	40	1	5	2.77	0.862
Engage guest speakers	40	1	5	3.32	0.917
Challenge existing beliefs	40	2	5	3.35	0.802
Explain solution process	40	1	5	2.98	0.733

Notes: 1 = Strongly agree, 2 = Agree, 3 = Not sure, 4 = Disagree, 5 = Strongly disagree

Table 3

Types of challenges encountered by ESL teachers in promoting HOTS via ICT

Challenges in using ICT to promote HOTS	N	Minimum	Maximum	Mean	Std. Deviation
Lack ICT skills	40	2	4	3.00	0.716
Lack technology guidance	40	2	4	2.88	0.516
ICT rapidly changing	40	1	3	1.83	0.712
Difficult to adapt	40	2	4	2.93	0.526
Poor internet connectivity	40	1	3	1.70	0.758
Requires extra time and effort	40	1	3	2.08	0.572
Difficulty in using software	40	1	3	2.05	0.639
HOTS learning without ICT	40	1	4	2.72	0.716
No idea how to start	40	2	4	3.08	0.616
Influenced by friends	40	2	4	2.78	0.660

Notes: 1 = Strongly agree, 2 = Agree, 3 = Not sure, 4 = Disagree, 5 = Strongly disagree

that ICT tools enable HOT activities to be effectively conducted in the classroom. A desktop application and presentation software are commonly used by teachers. Desktop applications and presentation software are both easy to use and easily accessible in schools as these applications are provided by most schools. ESL teachers acknowledge the importance of these ICT tools as shown from the results collected with the majority of ESL teachers using them frequently to promote HOT activities. This discovery is in line with Wastiau et al.'s (2013) study which found that teachers had positive views on the benefits of ICT utilisation in schools. These ICT tools are able to create more entertaining and attractive classes for students, with the added ubiquity of inserting videos and related graphics.

Among the various HOT activities, group activities are the most popular HOT activities being conducted by teachers in the classroom. Activities in groups enable students to actively analyse, evaluate and create information independently as each student plays a part in completing the group activities. Each student is given a specific role in group activities. From the results collected, ESL teachers prefer to conduct group activities and brainstorming activities as these classroom activities promote active learning, providing students with ample opportunities to actively acquire information by searching answers for themselves. This finding is supported by Nguyen and Nguyen's (2017) who discovered that the explicit instruction of HOTS in the learning and assessment improved students' learning of linguistics. While ESL teachers in the study agreed with conducting group and brainstorming activities, many HOT activities were left unexplored. Engaging the guest speakers or challenging existing

beliefs are rarely being conducted by the ESL teachers, which means they are rarely prioritized as preferred HOT activities. This finding also relates to the results on the types of challenges by ESL teachers in promoting HOTS via ICT from Table 3, with many ESL teachers stressing that they have no idea where to start on HOT activities via ICT utilization. The data on the types of HOTS activities conducted by ESL teachers via ICT and the types of challenges encountered by ESL teachers in promoting HOTS via ICT from Table 2 and Table 3 concur with each other as ESL teachers have no idea where to start engaging students with guest speakers or encouraging students to challenge existing beliefs as these activities are rarely being explored in the education setting.

The internet is the most widely used ICT tool in the study and this supports the finding that ESL teachers are aware of the ICT's significance in expanding their teaching efficiency. As the internet has numerous uses such as for search engines and connecting with the world through social media, ESL teachers are able to easily recognize its utility even in classroom settings. The ESL teachers do not face any difficulty in using the internet as they are only limited to a poor internet connection as the main challenge. ESL teachers also do not require much guidance to use the internet in teaching as the application is easy to use and information is obtained with simple clicks. This scenario reinforces the fact that internet is the most widely used ICT tool by ESL teachers as it is both easy

to use and does not require much guidance from other ESL teachers, with most ESL teachers already using the application, they are positively influenced by their peers to use the internet. This data is in line with numerous studies, mainly Ali (2012) and Yee et. al.'s (2015) study which advocated that learning in schools could be augmented through the power of ICT. Lorenzo's (2016) study on the effectiveness of the computer and the internet in public high schools also supported the findings in this study. Lorenzo (2016) found that integrating ICT in education promoted classroom learning and instruction by enabling wide access to additional information. The results collected support Lorenzo's (2016) findings as ESL teachers commonly use the internet to promote active learning and discussion, thanks to the application's ability to provide border-less information from all around the world. As there are various contexts globally that incite students' interest, the internet is a suitable platform for teachers to use in classroom settings to promote HOTS.

The data in this study indicated that ESL teachers only implemented ICT in their classes sparingly. Most of the respondents answered 'Not sure' about their usage of ICT to promote HOTS. Examples from the results collected include, the ESL teachers answered mostly 'Not sure' for conducting activities to challenge existing beliefs and activities on synthesizing information. Case studies and problem-based learning are both not commonly conducted in the classroom environment, as shown by the ESL teachers in the study who answered that

they are not sure whether they can conduct these activities or whether they can or the ways to use ICT to promote these activities effectively. This is mainly due to the fact they were not clear on the utility of ICT and their advantages. This discovery is in line with Ganapathy et al.'s (2016) study which found that ESL lecturers faced challenges that had to be urgently addressed in order to facilitate learning via ICT integration as a supplementary tool in promoting HOTS. While both Ganapathy et al. (2017) and Lorenzo's (2016) study showed the numerous challenges bound with conducting HOT activities via ICT utilisation, this study is significant in showing specifically what types of HOT activities which ESL teachers are uncomfortable with. Case studies, problem-based learning and challenging existing beliefs are among the activities avoided by ESL teachers to promote in the ESL classroom, especially when they struggle to utilise ICT applications to assist them in these activities.

Most of the ESL teachers responded that logistics is an issue for the utilisation of ICT in promoting HOTS in schools, mainly due to poor internet connectivity. A mean score of 1.70 was obtained from the study as most teachers agreed that terrible internet connectivity restricted their ability to utilize ICT to promote HOTS. As internet connection is necessary for connecting to social media, search engines and online software, the unreliable internet connection in schools proved to be a significant hindrance to ESL teachers who attempted to promote HOTS via ICT.

From the study, the main challenge of promoting HOTS via ICT is found to be logistic challenges. This is supported by Sicilia's (2005) study, which found that the difficulty to access the computers and poor quality of resources were major hindrances to ICT utilisation in schools. The results of this study concur with Sicilia's (2005) study as ESL teachers commented that they have to move from the class into the ICT laboratories. Additional time is also needed to line the students and prepare them to enter the ICT laboratories. These drawbacks are significant, therefore the ESL teachers opted not to use ICT applications due to logistic challenges.

CONCLUSION

In short, while teachers mentioned that they were aware of the importance of ICT in promoting HOTS, they still needed to update their HOTS pedagogical practices via ICT so they were able to effectively teach HOTS lessons in schools. Wheeliham (2011) advocated that creativity and innovation were the keys to success in today's modern world. Challenges are inevitable when teachers try to incorporate HOTS via ICT tools. Among the challenges faced by teachers included lack of ICT skills, the difficulty of using certain ICT software and the rapidly changing nature of ICT resulted in difficulties in coping with ICT. Bingimlas (2009) proposed that teacher's lack of competence and lack of access to resources were major setbacks for integrating ICT into science education. This study further explores the field and

confirmed that ESL teachers do indeed face challenges in logistics and personal skills when attempting to integrate ICT into their pedagogical practices. The study also specifies on the types of specific challenges encountered by ESL teachers in using ICT to promote HOTS and also the various HOT activities which are avoided by ESL teachers because of certain restrictions, such as requiring further exploration; an example would be challenging existing beliefs, as ESL teachers in the past only conducted the chalk and talk method, and students were never given sufficient opportunities to ask and actively obtain information. They were only passive receivers of what was taught to them.

However, the power of ICT enables the active creation and usage of information among both students and teachers alike. It can be concluded that the acquisition of HOTS can be better taught by teachers who possess effective HOT pedagogical practices via ICT as even the ESL teachers themselves affirmed the importance of ICT though they are discouraged by the various challenges bound with the utilization.

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