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Foreword

Welcome to the TESOL International Journal Volume 16 Issue 6.2 2021. We present 7 articles for your ongoing research in this area of Second Language Acquisition. As we approach the second half of the year we are preparing for a move to a more friendly and versatile journal operation. From July we shall be using a unique domain where all our journals will be situated, Open Access and Free to publish, which must remain our underlying principle. We shall also expand our unique group with new journals where we shall be presenting some unique models to publish such that you the author and we the publisher can significantly advance the profession free from the interference of administrators who care only for their personal profit at the expense of academic research and academic integrity.

In this edition, our first paper is authored by Aysha Saeed AlShamsi from the Higher Colleges of Technology, Al Ain, UAE. The author's study, Cognitive and Metacognitive Skills on Elementary School Students: Mixed Methods Study, explores the influences of cognitive and metacognitive abilities on the bilingualism and biliteracy of Emirati fifth-grade students whose mother tongue is Arabic but who are learning core subjects in English. Key implications result from the research and will be of importance to teachers and especially curriculum designers and implementing government authorities. The second article is entitled Pre-Service Teachers' perceptions on 'Google Translate' as a Tool for English Language Learning. Masitowarni Siregar os the lead author. The objective of their study was to investigate English pre-service teachers' perceptions of Google Translate (GT) as a language-learning tool, which showed that students had positive attitudes towards GT as a language-learning tool based on usefulness, ease of use, accuracy, and use. However, the research showed the use of Google Translate might clash with the policies of higher education, and particularly the issues of academic misconduct and (of more concern) plagiarism may arise. Inevitably the extra workload falls on the educator to watch over this critical issue.

The third paper is Reading Prosody and Comprehension of Adult ESL Learners in Malaysia Authored by Rafizah Rawian. The study investigated the reading prosody and comprehension of adult ESL learners in a Malaysian university. A comprehensive analysis was conducted on four prosodic features namely reading expression and volume, phrasing in reading, reading smoothness as well as reading pace. The research main objectives were to examine the

respondents' performance in each prosodic feature and their comprehension level and to examine the relationship between reading prosody and comprehension. The research finds that Language instructors should consider adapting prosody in reading as an instructional tool to enhance reading activities as well as an instrument to evaluate students' comprehension and word decoding. In addition, considerable exposure and practice towards English reading materials would greatly increase students' expressive reading.

The next paper in this volume is entitled English Collocations Improvement through Google Scholar co-authored by Deliana, Ebrahim Panah and Ruzita Manshor. The study involved 20 ESL students in correcting one hundred collocations from their essays through Google Scholar consultation. The research attempted to assess the correctness or naturalness of Google Scholar composed collocation from the point of expert native speakers of English. The findings show that, on average, TESOL student teachers corrected their collocations through Google Scholar consultation with an accuracy of 62%. The author's study has implications for students, instructors, and researchers.

The fifth paper by is co-authored by Dewi Kesuma Nasution, Ebrahim Panah and Wahyu Tri Atmojo. Their research is titled Tertiary Students' Preference of Online Educational Games in the Language Learning Course. The question has long been debated, namely what value, if any, do games bring to SLA. As the authors' note, new generation learners have acquired specific technical ICT-related skills, new ways of thinking, and learning preferences, requiring a novel educational approach involving games. Whilst the present study sheds some light on the use of online Educational Games in terms of Student's Preferences in English language learning in Malaysian universities, it is clear that educational games are becoming the 'new normal' in terms of English Second Language Learning, thus this research clearly calls out for follow up research such that the future benefits of Educational Games can be built into teacher training courses.

The sixth paper, "The Impact of Learning Styles on Tertiary Students' English Language Acquisition" is co-authored by Meisuri, Chin Kuo Ren, Abdurahman Adisahputera, Dedi Sanjaya and Masitowarni Siregar. Their research was conducted to explore the learning preferences of different students and how the different learning styles affect the students' mastery of the English language. This is a question that has faced most teachers at some stage of their career. The research showed that Read/ Write learners achieved a high average score

whilst kinesthetic learners were the group that achieved the lowest of the average scores in English in terms of learning styles. The research was specific to learners in a Malaysian university. The second preferred learning style was the visual learning style. Aural and Kinesthetic learning styles placed third and fourth, respectively. Such research calls into question the issue of Culture, and whether same or different findings might be found in other ESL cultures, thus giving curriculum writers and designers a better indication of what is needed in that particular teaching and learning culture.

The final paper is by Loo Ee Ng, Mohd Khairil Abdul Karim and Li Pin Tan. Their paper pd titled Tertiary Students' Motivation Level in Online Learning Versus Face-to-Face Learning. The world was plunged into a form of unprepared chaos as the Covid19 pandemic erupted and spread. Education was not spared. This fascinating research looks at two key questions - (1) Is there a significant difference in students' motivation level in solely online learning as compared to F2F learning? (2) Which aspectd of online learning and F2F learning attracts students the most? Whilst the issue of culture underpinning learning appeared in the previous article, culture is on the whole absent from a globally enforced online learning situation. The study concludes that there is a significant difference in each motivation dimension: Attention, Relevance, Confidence, and Satisfaction between online learning and F2F learning. For those countries whose governments have failed to handle the pandemic efficiently, and thus online education will continue indefinitely, there are suggestions from the researchers herein – namely that motivation in online learning can be further enhanced. Those countries who are looking at online education continuing beyond 2021 would well be advised to implement such suggestions.

We trust you will enjoy reading, reviewing and evaluating the findings of the aforementioned academics. How does their research fit into your observations and other known research? It is clear from the research into English Second Language Acquisition that we publish, that the more we research, the more research is called for, for each new research finding opens up discussions on inter alia, culture, etc., and whether that research can be followed or distinguished in other ESL EFL settings. And that in turn leads to more specialized need for upgraded Teacher training.

Cognitive and Metacognitive Skills on Elementary School Students: Mixed Methods Study

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Bio-profile:

Aysha AlShamsi began her work in education as an English language high school teacher in the UAE and later worked as an Academic Vice Principal, School Principal, and Lead Cluster Manager. Aysha received her MED in Curriculum and Instruction and Ph.D. in Language Education & Literacy from the UAE University. Upon completing the Ph.D. requirements, Aysha served as Assistant Professor in the Higher Colleges of Technology-Faculty of Education, Early Childhood Education Department. Aysha was recently awarded a grant from the HCT to improve the use of language and literacy laboratories in teacher education programs. This grant research fund aims to enhance pre-service teacher education to serve Emirati bilingual students better. Aysha has various research and community initiatives concerning bilingualism and biliteracy in the UAE context. Aysha's research interests include exploring bilingualism and biliteracy in classrooms, bilingual education policy, and the ways in which pre-service and in-service teachers can support their literacy teaching in a bilingual context. Aysha has initiated a new research line around technology in higher education after joining the HCT. Aysha has published research journals on these topics. She presents her research findings at national and international events. Her work with industry partners and higher education institutions involves implementing teaching and learning strategies to put literacy teaching theory into practice in such a bilingual context. Aysha has been invited to share her research insights with educators and stakeholders through forums, discussion panels, and conferences.

Abstract

While research on cognitive and metacognitive abilities of bilingual and biliterate students has been advancing, limited studies have examined these influences in the Arabic context. The current study explores the influences of cognitive and metacognitive abilities on the bilingualism and biliteracy of Emirati fifth-grade students whose mother tongue is Arabic

but who are learning core subjects in English. This is an explanatory sequential mixed method study where quantitative data from Grade 5 students (n = 350), and their Arabic and English teachers (n = 200; and n = 150 respectively) were first collected, followed by in-depth interviews with three students, two English teachers, and two Arabic teachers. Findings showed that students used their cognitive and metacognitive abilities more freely in Arabic lessons as compared to English. However, Arabic teachers reported that students use background knowledge in their first language in a better way but also demonstrated insufficient transfer strategy between the two languages.

Keywords: *Emirati education; bilingual education; bilingualism; biliteracy; cognitive abilities; metacognitive abilities*

Introduction

Literacy development theories suggest that development of students' competence in first language (FL) is pivotal for not only learning second language (SL) but also for future success (Akoğlu & Yağmur, 2016; Baker, 2006; Butzkamm, 2003; Cummins, 1979, 2001; Qian, 2002; Ng, 2013; Skutnabb-Kangas, 2000; Somers, 2017). In his seminal work, Cummins (1976) argued that bilingualism, referred to as the ability to speak two languages, leads to cognitive flexibility because bilingual students have better abilities to reflect on aspects of language known as "metalinguistic awareness" (Adesope et al., 2010). Moreover, mother tongue helps them think, communicate, acquire, and understand the grammar of the SL (Butzkamm, 2003). Later, Grosjean (2013) defined "bilingualism" as the ability of using two languages, separately or together for different purposes in different contexts, with various people to achieve certain communicative goal through reading, writing, listening, and speaking.

The increasing importance of bilingualism for future growth of individuals paved the way to increasing focus on biliteracy, defined as the ability to write and read in the SL (Midgette & Philippakos, 2016), and designing teaching pedagogies that facilitate a conducive environment for students to learn dual languages. Koda (2005), for example, suggested that the students' FL and SL development policies need to be valued and connected with classroom activities in English language teaching and learning context and proposed a correlation between learning to read in the FL and subsequent reading achievement in the SL. Similarly, Qian (2002) had earlier established that FL proficiency positively influences SL oral proficiency and helps students learn in their early years of education. This transition of

proficiency from FL to SL is mediated by students' ability to use their cognitive and metacognitive capabilities. In the same vien, Shen (2018) conducted a study with three successful EFL learners and three EFL less successful learners according to their English test scores and General English Proficiency test results. Shen found that successful learners were able to interactively apply various strategies to process words and comprehend a text.

Therefore, as noted by Cummins (2000) and Galali and Cinkara (2017), if students are provided with sufficient FL instruction, exposure to the SL and motivation to learn a new language will sharpen students' cognitive abilities required to transfer the proficiency from FL to SL. This is aligned with Baker's (2001) research that emphasized the development of the main processing channel to enable bilingual children to fully use both languages to be successful in academia. This is evident in distinct languages such as Arabic and English where students who are taught concepts in the FL and are exposed to comprehensive input are able to construct complex concepts in both languages (Baker, 2001). Therefore, from a cognitive perception, the development of proficiency in the FL and bilingualism among students triggers the development of the cognitive abilities that are required for effective language use and vis-à-vis academic performance (Midgette & Philippakos, 2016).

The present study aimed at exploring the transition of language skills and harnessing of students' cognitive abilities in an Arabic context. The study underscores the influence of the level of English and Arabic development among fifth-grade students on their cognitive and metacognitive skills and in turn their bilingualism and biliteracy. The study includes perspective of bilingual students and observations of their Arabic and English teachers. Fifth-grade students are pertinent unit of analysis because they ought to exit from Cycle 1 (primary level) and enter Cycle 2 (middle school) where they experience more challenging tasks in using SL.

Accordingly, the following questions have been considered to explore the context of bilingualism and biliteracy practices of fifth-grade students from a cognitive perspective:

i. What is the influence of cognitive and metacognitive abilities of Grade 5 Emirati students on their bilingualism and biliteracy as per their own observations?
ii. What are cognitive and metacognitive influences on Grade 5 Emirati students on their bilingualism and biliteracy, as observed by their Arabic and English teachers?
iii. What are the differences between perception of Grade 5 students and their teachers about student's cognitive and metacognitive abilities that influence their bilingualism and biliteracy (if any)?

Literature review

Bilingualism is the ability to speak well in two languages, whereas biliteracy is defined as reading and writing well in two languages (Cummins, 1981; Hornberger, 1992; Midgette & Philippakos, 2016; Niyekawa, 1983). In a rather comprehensive definition, Niyekewa (1983) suggests that bilinguals are those individuals who are proficient in speaking, listening, reading, and writing two languages. Research indicates that bilingualism brings cognitive and metacognitive advantages as metalinguistic awareness including reflections, evaluations, and direction of attention (Dillon, 2009; Mady, 2017). The cognitive and metacognitive advantages of bilingualism require that students reach sufficient level of proficiency in both FLs and SLs (Bialystok, 2006; Nieto, 2000; Sparks et al., 2009). They can develop proficiency in both languages simultaneously because linguistic competence is transferred between languages, even when languages are as distinct as Arabic and English (Leafstedt & Gerber, 2005). This becomes possible because despite their differences, some common underlying cognitive processing systems exist among the languages (Baker, 2006; Bilash, 2009). Students may also acquire high skills and proficiency at first in the FL and subsequently use these skills in acquiring proficiency in the SL (Nieto, 2000).

Transfer of literacy skills among biliterate students

Biliteracy incorporates transfer of literacy skills, such as reading and writing strategies, between languages in a biliterate student (Bassetti, 2007; Bialystok et al., 2005; Jared et al., 2011). Many studies support the view that biliterate students take advantage of cross-linguistic transmission of reading (Bassetti, 2007; Bialystok et al., 2005; Jared et al., 2011; Wang et al., 2009) and writing (Bournot-Trites & Seror, 2003; Gort, 2006) capabilities. The basic premise is that students' ability and skills to read in their FL corresponds with the motivation and skill to read in their SL (Jiménez et al., 1996; García, 2000). The studies conducted in the context of learning English as secondary learning dovetail these findings. Midgette and Philippakos (2016), for example, inspected bilingualism and biliteracy and its impact on the orthographic and writing development of the beginners. Their results showed that biliteracy positively affected the students' achievement of English orthography and encouraged the improvement of writing abilities in both languages. In an earlier study, Dweik and Abu AlHommos (2007) showed that despite the linguistic gap between Arabic and English, Arabic writing abilities could be transmitted positively to English.

Effective cross-linguistic transmission of reading and writing skills requires taking into account the graphophonic information by using pieces of information for the pattern of words

and the sounds they make (Bernhardt, 2000), utilizing lexical information (Bernhardt, 2003) and syntactic information (Bernhardt, 2000) and having basic knowledge to understand the textual content (Baker, 2006; García, 2009). Some students use translation technique in their mind to understand the content as well as to understand each other. For example, Mahmoud (2000) discovered that translation makes it easy to understand the context of the target language, especially for students who have low proficiency of secondary language.

Nevertheless, transition of writing and reading skills in biliterate students is also encountered by number of challenges. Mthethwa (2016) suggested Chinese learners in a bilingual context tended to use Chinese before they wrote in English as a language of thought especially among learners at lower proficiency. Therefore, the researcher conducted a study with Grade four students in Swaziland where English was the medium of instruction to explore the effect of L1 on L2. The researcher found that 48% of the students transferred Siswati's structure to English. Dewik (1986) showed that Arab scholars like to use repeated and similar sounding word in their writing tasks, as compared to English students who manage to be more comprehensive. Similarly, Ellis (1986) discovered that negative transition can occur for Arab scholars writing in the English language. Arab learners generate ungrammatical and poorly written sentences because of the impact of the Arabic language. They form sentences with wrong punctuation—particularly upper-case letters—because the Arabic language does not have these guidelines; generate sentences without the verb; and generally, produce word-by-word translations (Alduais, 2012).

Research also shows that cross-linguistic transmission of readings skills, and vis-à-vis challenges encountered in this process, vary among students of different ethnicity and primary languages. Droop and Verhoeven's (2003) study showed that Moroccan and Turkish students were less proficient at word, sentence, and document levels than Dutch students. Similarly, while native and nonnative speakers of English utilize similar reading techniques in understanding an English text to a certain extent, some differences are found between natives and those students who learn English as secondary language (Bernhardt, 2000; Droop & Verhoeven, 2003). The results are aligned with Shen (2018) study with successful and less successful EFL learners who were classified according to their English proficiency. Shen found that successful learners use more strategies than less successful ones as they use various strategies when processing English reading. Bernhardt (2003) and Mokhtari and Reichard (2004) argued that this is because of the degree of similarity between the FL and SL. For instance, students having a primary language that use nonroman alphabets, like Arabic, find it relatively difficult than their counterparts, having FL based on roman alphabets, in transmitting

ideas and approaches in English such as scanning, skimming, guessing of words based on context, patience for uncertainty, skipping unknown words, observing, identifying structures of the content, and using previously learned basic or advance knowledge to fully understand the content (Baker, 2006; García & Bauer, 2004). Wang et al. (2009) suggested that transition of skills is convenient in nonalphabetical languages like Chinese, whereas Mumtaz and Humphreys (2001) argued that transition occurs more smoothly to alphabetic languages like English.

Bilingual children use strategies such as translanguaging, that is, the practice of bilingual children when they use the full span of their linguistic, semiotic, and social resources to make sense of what they try to understand (García & Kleyn, 2016). As such, this translanguaging perspective recognizes that bilinguals draw on available resources (García & Kleifgen, 2018). Translanguaging has been a classroom language planning that combines two or more languages in a systematic way under an adult guidance to complete certain learning activity to assist students in understanding, shaping experiences, and gaining comprehension and knowledge (Conteh, 2018; Lewis et al., 2012). Unlike translanguaging, code-switching has been considered as an unnatural way of communication when bilinguals tend to separate languages in bilingual classrooms with a focus on monolingual communication (Cahyani et al., 2014).

Role of background knowledge

Background knowledge plays an important role in augmenting learners' linguistic skills. It is particularly useful for countries such as United Arab Emirates where students, in general, lack basic knowledge of the English language (O'Sullivan, 2004). Further, Endley (2016, 2018) observed that Gulf students utilize universal techniques while reading an English language content; such as trying to relate prior knowledge of the target language, guessing content with the help of neighbor words, repeating, reading, and examining and assessing content. In a study of Canadian–Arab students, Abu-Rabia (1998) showed that students are immersed and familiar with the cultural capacities of reading content.

Role of basic knowledge and vocabulary

Basic knowledge and vocabulary information are basic requirements for learning, especially for bilingual students (Gee, 1999, 2000). Vocabulary is affected by cognitive factors like memory and categorization, as well as advances through student's oral and written language experiences. Lasagabaster (2001) suggested that knowledge of a language

significantly affects writing, reading, and grammar exams in English. Similarly, Kecskes and Papp (2003) observed that the degree of capability in SL is linked with understanding the fundamental theoretical base. Specifically, in case of transition between Arabic and English framework of SL, vocabulary, and specific orthographic aspects are thought to be learned independently. BaSaeed (2013) observed that students transmit the structure, meanings, and their distribution, as well as culture from Arabic to English.

Role of instructional mechanism

Although cross-linguistic transition of skills can be acquired with no guidance (Yang et al., 2017), researchers tend to agree that instruction mechanism and practices make a significant contribution in sharpening these students' skills. Role of educators is particularly pivotal in this regard because they can use bilingual instructional strategies (Cummins, 2014) and develop metalinguistic knowledge among children. Metalinguistic knowledge is the kid's aptitude in reflecting upon the sentence structure and simplifying interpreting and listening abilities (Gathercole & Baddeley, 1989). It is particularly useful for Arab countries where students are reported to adopt different linguistic techniques in their reading session so that they could fully understand the content other than in their FL (Alsheikh & Mokhtari, 2011). A study by Diaab (2016) focusing on Libyan English foreign language (EFL) learners revealed that the use of traditional instructional methods hindered the students' acquisition of practical English speaking skills. This suggests that the kind of instructional mechanism in place affects cross-linguistic transition of skills.

Theoretical framework

This research builds its theoretical foundations on the Common Underlying Proficiency (CUP) model proposed by Cummins (1980) which presents the cognitive perspective toward the literacy on an analogy with an iceberg. According to Cummins (1979), FL plays an important role to adopt SL, and the development of conversational and academic language makes it easy to have proficiency in both languages.

The proficiency of the FL is a strong predictor of the learning capability of the SL (Cummins, 2001; Skutnabb-Kangas, 2000). CUP model implies that two languages are merged under the surface and do not function independently although they are diverse in the external conversation. As indicated by Cummins (1980), the two languages are merged under the surface, where the relationship between ideas and portrayals, for example, words and pictures, exists for both of the two distinct languages. There is a unique typical point where the two

icebergs are merged, and both languages work through one main processing framework (Baker, 2001; Cummins, 1980). This implies that regardless of the language in which a kid is working, there is one incorporated foundation of thought (Baker, 2001). According to the CUP model, Baker (2001) clarified that bilingualism is probable because individuals can store and work effectively in at least two languages. So, both or one language might help to develop the information processing skills and education fulfillment. The reason for this is that both languages are linked to the principle processor (Baker, 2001).

Cummins (1981) recognized the importance of, first, developing basic interpersonal communication skills (BICS) that are necessary for meaningful interactions in a social context and, second, developing cognitive academic language proficiency (CALP) in a de-contextualized academic setting. The BICS are at the outside of the iceberg, whereas the CALP skills are under the surface. Cummins postulated that BICS and CALP are distinct language registers that students must master in both FLs and SLs in order to succeed academically. In other words, conversational componence is connected to the lexical, syntactic, and phonological skills essential to working in normal interposed situations (May, 2004). Moreover, it utilizes comprehension, vocabulary, and pronunciation, which lie above the surface regarding Cummins' iceberg analogy and are apparent in conversation.

Moreover, the CUP model poses some limitations as the framework will not work at its best if children are made to work just in a SL when that is imperfectly learned. Thus, Baker (2001) proposed that reading, listening, writing, or speaking in both languages helps the entire cognitive framework to foster the proficiency in both languages. On the other hand, working on cognitive functioning and academic performance might be negatively influenced if both languages are not taught effectively (Baker, 2006). When the SL is used as the medium of instruction for compulsory subjects, children are able to bridge the gap to a primary processing channel in bilingual settings as literacy growth relies fundamentally on the cognitive process (Baker, 2006).

Context of the study

The United Arab Emirates (UAE) government formulated a bilingual learning strategy for the Emirati schools as part of education reforms agenda to accomplish UAE vision 2021. The reforms initiative was started in 2009 when the Abu Dhabi government set out an impressive schools' reform program for Emirate funded schools by presenting bilingual education framework (O'Sullivan, 2015). The goal of the program was to develop Arabic and English languages' proficiency in students along with the accomplishment of the Emirate's

agenda. It was considered that by being proficient in the Arabic language, they could be empowered to learn the English language, and therefore, effectively achieve real bilingualism and biliteracy. The main goal of the Ministry of Education and different higher education institutions of UAE government is to accomplish a high level of proficiency in Arabic and English languages.

Moreover, in Cycle 1 (1–5) equivalent to primary school, Grade 5 is considered as a stage to get basic knowledge and skills necessary for learners to continue their bilingual progress with biliteracy exercises. In this study, the focus was on Grade 5 students due to its significance as a transitional stage from Cycle 1 to Cycle 2. Grade 5 is considered as a shift between elementary school (Cycle 1) and middle school (Cycle 2).

In the UAE, the proficiency in languages is observed with the results of state administered tests. Bilingualism and biliteracy are associated with the students' general academic improvement (Gupta, 2002; García, 2000). This diglossic condition consequently makes learning Arabic to an adequate standard hard for some Arab learners (Elbeheri et al., 2011). Therefore, students go to schools to prepare for casual basic Arabic that they have learned at home and then presented to Modern Standard Arabic (MSA). Hence, they start their training talking a language and must start to learn MSA officially while learning English as an SL simultaneously. This can be a burden psychologically. Language issues appear with the learners' lack of ability in English in addition to their low capability in Arabic. Hence, this study uses a group of Emirati fifth-grade students to investigate the influences of cognitive and metacognitive abilities on bilingualism and biliteracy practices of Arabic and English.

Methodology

The study employed a pragmatism driven mixed methodology design using quantitative and qualitative phases in a sequential manner. First phase was quantitative in which data was collected from two sources, followed by the qualitative phase. Quantitative–qualitative sequence makes its explanatory design, in which findings of the quantitative phase are used for subsequent qualitative phase (Creswell & Clark, 2011). Coding and thematic analysis of qualitative data were undertaken through NViVo 12 software, and mean scores were computed through SPSS 24 for quantitative data.

For phase 1, probability sampling was used to ensure that respondents are true representative of the target population (Creswell & Clark, 2011). The data were collected from two sources, including students and teachers of public schools in UAE in the year 2016–17. A list of Grade-5 students and teachers of Cycle 1 school was solicited from Abu Dhabi Education

& Knowledge Authority (ADEK), and 500 students and teachers were selected randomly. After getting ADEK approval, the researcher sent the survey about bilingual and biliteracy experience to students of Cycle 1 schools and received 350 responses. Out of the total respondents (n = 350), 35.7% were male students (*n* = 125), and the remaining 64.3% were female (*n* = 225). All students had studied English for seven years. One bilingual member of staff in each school read the questions to the students, explained each sub-category and answered specific questions. In many schools, this assistance was carried out by the researcher herself. The students could also ask questions while completing the surveys. To maximize the number of returns the researcher sent emails out to the schools and recruited specific members of staff to administer the questionnaires and encourage completion.

Second source of data in phase 1 were Arabic and English teachers, who were selected randomly from the list provided by ADEK. All these teachers were female and had taught Grade 5 students in the previous year. Among total respondents (*n* = 350), 42.8% were English teachers (*n* = 150) and remaining 47.2% were Arabic Teachers (*n* = 200). Both English and Arabic teachers were native speakers of English and Arabic language, respectively. For Arabic teachers, English was SL. The teachers' surveys were distributed by the school administration and completed by teachers individually.

These questionnaires were developed by the researcher from a pool of items, compiled from the previous bilingual and biliteracy related studies (Cummins, 1979; 1981; 1984; 2000; Baker, 2001; García & Bartlett, 2007; García, 2009; Hornberger, 2004.) The previous frequency of certain questions improves both validity and reliability, especially when used as a pilot stage (Dörnyei, 2003). These questionnaires were designed with Likert items, grading any response from 1 = Strongly Disagree; through 2 = Disagree; 3 = Neutral; 4 = Agree; to 5 = Strongly Agree. The English teachers answered the English language version, whereas the Arabic teachers and the students answered the Arabic version of the survey.

The second phase of the study was qualitative for which "purposeful sampling technique" was used. "Purposeful sampling in qualitative research means that researchers intentionally select or recruit participants who have experienced the central phenomenon or the key concept being explored in the study" (Creswell & Clark, 2011, p. 174). The criteria for selecting respondents included availability and willingness to participate, thus making it closely resemble convenience sampling (Bryman, 2012).

Qualitative data were collected through interviews with students as well as Arabic and English teachers. Following Burke and Cummins' (2002) guidelines, the researcher designed an interactive activity that allowed the students to familiarize with the researcher and feel

comfortable with her before talking to them about their bilingual and biliteracy practices. After getting ADEK permission, this activity was conducted in an Arabic lesson and was based around designing a poster for the Year of Zayed. For interviews, semi-structured questions were prepared, following the guidelines of Kvale (2007), and three students (one boy and two girls) and four teachers (two Arabic and two English teachers) were interviewed. The Arabic teachers' and students' interviews were recorded in Arabic and translated into English by the researcher. The English teachers' interviews were conducted in English.

Interviews were conducted and thereafter audio-recorded, transcribed, and coded to provide rich data to answer the third research question. Coding for qualitative analysis was done in line with Braun and Clarke's (2006) guidance for thematic analysis. To this end, the researcher first familiarized herself with the emerging data, and then with the help of NViVo 12 software developed initial codes from the data. Thereafter, related codes were collated and merged, and thereafter, used in searching for themes. Finally, the emerging themes were reviewed and aligned to the study objectives

Permissions were taken from principals, UAEU's Institutional Review Board, and the Social Sciences Research Ethics Committee.

Analysis and results

The influence of cognitive and metacognitive abilities on Grade 5 Emirati students bilingualism and biliteracy-students' perceptions

Findings were first examined from a quantitative perspective by analyzing the mean (M) and standard deviation (SD) of the questionnaire items. In terms of skill/strategy transfer in English, the students did not think that learning English made it easier to learn Arabic. Equally, their English writing did not help to develop their Arabic writing. On the other hand, however, the respondents believed that their English reading helped to develop their Arabic reading. Further, they also reported that Arabic pronunciation affected English pronunciation. For skill/strategy transfer in Arabic, the students indicated that English pronunciation affected Arabic pronunciation whereas Arabic writing affected writing in English. However, the students believed that their Arabic reading and writing helps to develop their English reading and writing and that learning Arabic makes it easier to learn English. This suggests both positive and negative transfer between languages (See Table 1 for item-wise details).

Table 1: Students' report on skill/strategy transfer abilities in English and Arabic

Language	Items	M	SD
English	My way of English writing affects my Arabic writing.	2.54	.80
	Learning English makes it easier to learn Arabic.	3.27	.79
	My English writing helped to develop my Arabic writing.	3.34	.93
	My English reading helped to develop my Arabic reading.	3.48	.86
	My Arabic pronunciation affected my English pronunciation.	3.61	.62
Arabic	My way of Arabic writing affected my English writing.	3.88	.62
	Learning Arabic makes it easier to learn English.	4.51	.51
	My Arabic writing helps to develop my English writing.	4.21	.46
	My Arabic reading helps to develop my English reading.	4.03	.44
	My English pronunciation affected my Arabic pronunciation.	3.72	.56

In terms of the use of background knowledge in English, students reported that they had problems reflecting on what they had read. However, they reported an adequate ability to translate into Arabic with an aim of understanding English content better. They also resorted to code-switching when required and could adjust their reading speed. The students also claimed to use their background knowledge when reading and writing in English. Furthermore, with the use of background knowledge in Arabic, the students could reflect upon what they had read, used background knowledge when they read and write, and adjusted their speed when reading difficult content. However, they often resorted to code-switching when they expressed themselves (See Table 2).

Table 2: Students' report on their use of background knowledge in English and Arabic

Language	Items	M	SD
English	I reflect on what I read.	2.82	.88
	I translate in Arabic to help to comprehend written materials in English.	3.53	.77

	I resort to code-switching.	3.70	.93
	I can adjust my speed when reading difficulty texts.	3.90	.59
	I use my background knowledge to read and write in English.	4.60	.52
Arabic	I reflect on what I read.	3.47	.71
	I use my background knowledge to read and write in Arabic.	3.77	.83
	I resort to code-switching when I try to express my ideas.	3.92	.78
	I translate into English to comprehend written materials in Arabic.	4.05	.70
	I can adjust my reading speed when reading difficult texts.	4.38	.48

Qualitative response from learners supported the quantitative responses given by the students. First, some students revealed that they experienced challenges such as lack of confidence in reading texts, more so when they were before their classmates. For example, one student said:

> *I don't like to read in front of my friends, I can read by myself, I do many mistakes, but I read slowly. When I read in class, the teacher wants me to read fast, but I can't!*

Students observed, however, that the support and understanding they received from the teachers, as well as parents was instrumental in giving them confidence to handle the challenges they faced in handling the two languages. For example, one student observed:

> *Sometimes, I use "he" [-hia- She- in Arabic] for girls. I find it difficult to keep everything in mind when speaking, but I feel that the teacher understands what I mean. When I talk about my sister and mentions her name as Sara, and refer to her as "he," I think the teacher understands that I mean Sara as a girl.*

Another student similarly recounted seeking for help from her mother for Arabic words she had forgotten:

> *I ask my Mom about the Arabic equivalent of "elephant"! Sometimes I forget the Arabic meaning of some words…*

Besides seeking support from people around them (teachers and parents), the learners also had devised their own strategies to enhance their bilingualism and biliteracy. For example, it was common for some students to first think in Arabic before translating the same to English even though this had its own challenges. For example, a student observed:

> *When I write in English a sentence, I think of what I have to say in Arabic and write it, the problem that it is wrong in many cases. I tried to say once "Ahmed reads his favorite story," and I found that it is different from what our Arabic teacher told us to write.*

As already observed, what was learned in one language could also be applied in the next as evidenced in the reading of one student:

> *What I learned in Arabic helped me reading longer words in English. For example, when the teacher asked us to read the word "education," I stopped, read the first part, then continued…*

Students also made use of Google Translate and other devices around them to enhance their bilingualism and biliteracy, much as the translated works were sometimes deficient:

> *We use Google Translate. We translate words and phrases. I notice my teachers' face expressions when she reads what we translate. For example, when we write the word "girl," it is translated to "banat," which is the plural form of "girl."*

The influence of cognitive and metacognitive abilities on Grade 5 Emirati students bilingualism and biliteracy-teachers' perceptions

In terms of skills/strategy transfer from Arabic to English, English teachers believed that students used their cognitive abilities to transfer skills and strategies to make their English learning easier. It was evident that students were employing a positive transfer of their FL and a negative transfer of the grammatical rules between the very different languages of Arabic and English. Further, on skills/strategy transfer, Arabic teachers suggested that their students had problems in transferring Arabic grammar to English but could transfer reading and writing strategies and skills from Arabic to English (See Table 3).

Table 3: English and Arabic teacher' report on skill/strategy transfer

Teachers	Items	M	SD
English Teachers	My students are able to transfer writing strategies from Arabic to English.	3.006	1.073
	My students are able to transfer reading strategies from Arabic to English.	3.020	1.113
	My students are able to transfer writing skills from Arabic to English.	3.046	1.181
	My students are able to transfer reading skills from Arabic to English.	3.166	1.336
	My students are able to transfer Arabic pronunciation methods to English.	3.813	0.617
	Students confuse between English and Arabic grammar rules.	3.946	0.748
Arabic Teachers	My students confuse between English and Arabic grammar.	2.695	0.635
	My students transfer reading strategies from English to Arabic.	3.470	0.807
	My students use English writing skills in Arabic.	3.620	1.005
	My students transfer English pronunciation methods into Arabic.	3.680	1.172
	My students use English reading skills in Arabic.	3.745	1.186
	My students transfer writing strategies from English to Arabic.	3.975	1.039

With regard to students' use of background knowledge, English teachers suggested that students had problems with referring to dictionaries, reflection on what they had read, and translation as a tool in the understanding of a written English text. However, the teachers observed that the students tried to adjust their speed when reading difficult texts, used code-switching strategies when they tried to express their ideas, and used background knowledge when writing and reading English. Moreover, on the use of the background knowledge, Arabic teachers suggested that students had problems adjusting their reading speed when reading a difficult text. Students also did not refer to dictionaries when required and resorted to code-switching to express themselves in English. However, they demonstrated an ability to use their background knowledge when reading, and when it came to writing, they could translate words/phrases given to comprehend written materials. They also reflected on what they read (See Table 4).

Table 4: English and Arabic teachers' report on the use of background knowledge

Teachers	Items	M	SD
English Teachers	My students look up a dictionary when facing difficult words.	2.793	.876
	My students reflect on what they have read.	2.800	.749
	My students translate into Arabic to comprehend written materials.	3.373	.713
	My students adjust their reading speed for difficult texts.	3.393	.822
	My students can code-witch when they try to express an idea.	3.606	.694
	My students use background knowledge when writing in English.	4.026	.490
	My students use their background knowledge when reading in Arabic.	4.146	0.617

Arabic Teachers	My students adjust reading speed when reading difficult texts.	3.155	.997
	My students look up dictionary when they face difficult words.	3.190	1.086
	My students resort to code-switching when they try to express ideas.	3.275	1.079
	My students use their background knowledge when reading in Arabic.	3.555	.692
	My students translate into English to comprehend Arabic written texts.	3.600	1.060
	My students reflect on what they have read.	3.910	1.131

For comparison, the self-reports of English and Arabic teachers on the aforementioned cognitive and metacognitive abilities and skills were cross-tabulated. Regarding skill/strategy transfer, Table 5 shows that Arabic teachers noticed transfer from English to Arabic more than the English teachers did in the opposite direction. English teachers also reported a clear effect from both Arabic pronunciation and grammatical rules on English language learning. Moreover, Arabic teachers noticed that students used their background knowledge when reading and writing in both languages, whereas many students tended to translate into Arabic to understand English texts and use Arabic words in English lessons. They took to the help of a dictionary in Arabic lessons more than in English (See Table 5).

Table 5: English and Arabic teachers report on skill/strategy transfer and background knowledge

Category	Statements	English	Arabic
	Transfer writing strategy between languages.	31.3%	69%
	Transfer reading strategies between languages.	33.3%	52.5%

	Transfer writing skills between languages.	35.3%	51.5%
Report on	Transfer reading skills between languages.	43.3%	55%
Skill/strategy	Transfer pronunciation between languages.	70%	49.5%
Transfer	Confusion between English and Arabic grammar.	69.3%	9.5%
Report on Background Knowledge	Looking up the dictionary when encountering difficult words.	30%	41%
	Reflecting on reading.	23.3%	69.5%
	Translating into the other languages to comprehend written materials.	54.7%	35%
	Adjusting reading speed when reading difficult texts.	52.7%	49.5%
	Code-switching to express ideas.	72.7%	45.5%
	Using background knowledge when writing.	89.3%	84%
	Using background knowledge when reading.	87.3%	65%

Interview results with the teachers further shed light on the teachers' perceptions of students' cognitive and metacognitive abilities in relation to their bilingualism and biliteracy. English teachers noted that some of their students had grammar challenges (for example, the use of prepositions), which could be attributed to their Arabic background. One teacher, in this regard, observed:

> *English T: They will write the way we teach them like, Jill said, etc. They will use extra prepositions; I think the idea of extra prepositions come from Arabic.*

On the other hand, Arabic teachers had experience where their learners pronounced Arabic words in "modern" ways, partly as a result of their home environment:

Arabic T: Some children are raised by nannies and some children's mothers are non-Arabs. So, you can tell that their English is better than Arabic. When one of them say: "Let us go to the auditorium" that means "let's go to the auditorium." They pronounce the auditorium just like English pronunciation and they use it in their daily conversation instead of using the Arabic word of the "auditorium."

Both Arabic and English teachers talked about offering feedback and support to the students as a way of encouraging them.

Arabic T: It is essential to remind students with the basic skills in grammar and spelling. Making mistakes is natural; however, they need immediate corrective feedback.
English T: I always ask them to keep trying explaining things in English. In math, if I ask them for example when we are learning a new concept to translate, that's fine also in science it can help. Translation can help weak students in these subjects.

Translation was also allowed in Arabic language to enhance students' learning as evidenced in this response:

Arabic T: I encourage students sometimes to use English without affecting Arabic language. I allow translation into English. This is rare, it is just to encourage and motivate them read in Arabic. We use some English vocabulary especially; I have a part of the white board for displaying English and scientific vocabulary bilingually. When presetting their work, I accept they use some English words.

Even then, English teachers were cautious about the use of Google Translate as it was thought to be confusing.

English T: I don't allow them using Google Translate all the time because it has some interesting translation and it is confusing. I let them use dictionaries when they can, and I help them whenever I can.

Discussion

The study results showed that the students had difficulty with Arabic and English syntax. This is in line with Wallner (2016) and Owens (2012) who pointed out that FL and SL syntax is crucial for bilingual students who wish to establish a suitable level of writing and reading skills. It has also been observed that difficulty in understanding the text owes a great deal to the limited English vocabulary (García, 2000; Al Seyabi & Tuzlukova, 2015). García (2000), for instance argued that unfamiliar vocabulary in test questions negatively influenced SL learners' reading achievement. This is supported by Mthethwa's (2017) study who reported negative transfer from SiSwati to English. Findings in this study present similar conclusion as

deficient students' vocabulary decreased their ability to read and comprehend the questions. The finding also mirror those of Al Seyabi and Tuzlukova (2015) who concluded that poor reading comprehension is caused by the inability of students to understand the meaning of words in a text and deal with textual cohesion and coherence.

The students also reported that their weaknesses in Arabic linguistics affected their English learning. This finding is consistent with previous research which points out that development of the FL is the basis for literacy development in the SL (Baker, 2006; Butzkamm, 2003; Cummins, 2001; Somers, 2017). It is, therefore, essential to develop FL linguistics as they are instrumental to learners accessing the SL. Cummins (1981, 2000) and Butzkamm (2003) also suggested that students whose mother tongue is advanced can develop literacy in their SL more easily and more quickly. Students in this study reported difficulties with SL linguistics which affected their cognitive and metacognitive behavior in English lessons and their biliteracy practices in general. Qian (2002) suggested that this problem could be countered if students acquired competence in their mother tongue before learning SL. This is because SL acquisition pressure may interfere with the full development of FL inner speech that is necessary for later SL learning.

These findings also showed that students used their cognitive and metacognitive skills more freely in Arabic lessons as compared to English. Earlier, Butzkamm (2003) argued that using the FL helps students to think, communicate, acquire, and understand. Furthermore, there is a positive transfer of phonology, syntax, and semantics in nonalphabetic languages such as Chinese (Chan & Siegel, 2001). Mumtaz and Humphreys (2001) also reported a transfer of writing processes between alphabetic languages or languages with different writing systems, such as English and Chinese and English and Arabic (Mumtaz & Humphreys, 2001). Although the findings of this study did not confirm these transfers, which could be because Arabic and English are very distinct languages, it was found that students were able to transfer skills from Arabic to English. This finding is consistent with that of Martin-Rhee and Bialystok (2008), who found that bilingual children show more rapid responses to those tasks that demand inhibitory control. According to Cummins (1981, 2000) and Baker (2001), this control requires the ability to use background knowledge.

Students also reported some code-switching and translanguaging practices, which is consistent with the findings of Bauer (2000) and Endley (2016, 2018), who found that children code switch when reading with an adult in the SL. As for the use of background knowledge, English teachers reported that students faced difficulties in using their background knowledge. Different scholars have identified the difficulty with comprehension in a SL because of a lack

of specific background knowledge (García, 2000; O'Sullivan, 2004). Moreover, it was also found that though some students consulted parents, parental engagement was limited. This is also consistent with previous research which shows that home literacy experiences are related to the child's level of background knowledge (García, 1998; Zhang et al., 2020).

It was also evident from the study that teachers and learners had differing perspectives on the influence of cognitive and metacognitive abilities of the students as far as their bilingualism and biliteracy were concerned. For example, while students thought they could transfer skills and strategies and also resort to translation, the teachers thought they had problems with these. The platforms they used for translation (such as Google Translate) was confusing for teachers. Studies have shown that bilinguals draw on available resources such as code-switching and translation (García & Kleifgen, 2018; Endley, 2018), which the students in this study demonstrated. Also, as reported in the findings, Arabic teachers noticed transfer from English to Arabic more than the English teachers did in the opposite direction. Instructional approaches used with bilinguals partly have a bearing on their biliteracy and bilingualism (Diaab, 2016), and this should be keenly borne in mind.

Conclusions and implications

The results of this study present several implications for curriculum, instruction, and research. As part of bilingual and biliterate students' teaching and learning methodologies, educators are advised to provide meaningful learning environments that build on students' previous experiences and knowledge. In addition, they are advised to actively engage students in engaging tasks that enable them to understand the main concepts in the core subjects in both languages and enable the transfer of knowledge and skills between languages. Advisably, teachers should organize for well-planned learning opportunities with other expert colleagues to encourage the students to practice higher order thinking skills thorough bilingual learning activities that support questioning, explanation, and elaboration to co-construct their solutions.

As bilingual and biliterate learners draw on the resources (human and material) within their environment, it is prudent that teachers of such students be intentional in how they meet their learners' needs. Immediacy of feedback, as well as being there for support is instrumental in the role that cognitive and metacognitive abilities play in such students' bilingualism and biliteracy. Further, as there were cases where Arabic and English teachers had differing results, instructional methods used in bilingualism and biliteracy learning contexts need to be kept in tandem with changing societal trends and needs of the learners. With proper guidance, even

digital platforms like Google Translate can be used to the students' advantage instead of bringing about confusion as reported in this study.

References

Abu-Rabia, S. (1998). Social and cognitive factors influencing the reading comprehension of Arab students learning Hebrew as a second language in Israel. *Journal of Research in Reading*, *21*(3), 201–212. https://doi.org/10.1111/1467-9817.00057.

Adesope, O. O., Lavin, T., Thompson, T., & Ungerleider, C. (2010). A systematic review and meta-analysis of the cognitive correlates of bilingualism. *Review of Educational Research*, *80*(2), 207–245. https://doi.org/10.3102/0034654310368803

Akoğlu, G., & Yağmur, K. (2016). First-language skills of bilingual Turkish immigrant children growing up in a Dutch submersion context. *International Journal of Bilingual Education and Bilingualism*, *19*(6), 706–721. https://doi.org/10.1080/13670050.2016.1181605

Alduais, A. M. S. (2012). Simple sentence structure of standard Arabic language and standard English language: A contrastive study. *International Journal of Linguistics*, *4*(4), 500–524. https://doi.org/10.5296/ijl.v4i4.2621

Al Seyabi, F., & Tuzlukova, V. (2015). Investigating ELF reading problems and strategies in post-basic schools and university foundation programs: A study in the Omani context. *Malaysian Journal of ELT Research*, *11*, 35–51.

Alsheikh, N. O., & Mokhtari, K. (2011). An examination of the metacognitive reading strategies used by native speakers of Arabic when reading in English and Arabic. *English Language Teaching*, *4*(2), 151–160. https://doi.org/10.5539/elt.v4n2p151

Baker, C. (2001). *Foundations of bilingual education and bilingualism* (3rd ed). Multilingual Matters.

Baker, C. (2006). *Foundations of bilingual education and bilingualism* (4th ed). Multilingual Matters.

BaSaeed, E. (2013). An approach for teaching English language grammar to Arab young learners. *IOSR Journal of Research and Method in Education*, *1*(2), 20–30. https://doi.org/10.9790/7388-0122030

Bassetti, B. (2007). Bilingualism, biliteracy and metalinguistic awareness: Word awareness in English and Japanese users of Chinese as a second language. *Birkbeck Studies in Applied Linguistics*, *2*, 1–21.

Bauer, E. B. (2000). Code-switching during shared and independent reading: Lessons learned from a preschooler. *Research in the Teaching of English*, *35*, 101–130.

Bernhardt, E. (2000). Second-language reading as a case study or reading scholarship in the 20th century. In M. Kamil, P. Mosenthal, P. Pearson & R. Barr (Eds.), *Handbook of reading research* (pp. 791–811). Lawrence Erlbaum Associates.

Bernhardt, E. (2003). Challenges to reading research from a multilingual world. *Reading Research Quarterly*, *38*, 112–117.

Bialystok, E. (2006). Bilingualism at school: Effect on the acquisition of literacy. In P. McCardle & E. Hoff (Eds.), *Childhood bilingualism: Research on infancy through school age* (pp. 107–124). Bristol, England: Multilingual Matters.

Bialystok, E., Luk, G., & Kwan, E. (2005). Bilingualism, biliteracy, and learning to read: Interactions among languages and writing systems. *Scientific Studies of Reading*, *9*(1), 43–61. https://doi.org/10.1207/s1532799xssr0901_4

Bilash, O. (2009). *Improving second language education*. http://www.educ.ualberta.ca/staff/olenka.bilash/best%20of%20bilash/iceberg.html

Bournot-Trites, M., & Seror, J. (2003). Students' and teachers' perceptions about strategies which promote proficiency in second language writing. *Canadian Journal of Applied Linguistics*, *6*, 129–157.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Bryman, A. (2012). *Social research methods* (4th ed). Oxford, UK: Oxford University Press.

Burke, L. A., & Cummins, M. K. (2002). Using undergraduate student-faculty collaborative research projects to personalize teaching. *College Teaching*, *50*(4), 129–133. https://doi.org/10.1080/87567550209595893

Butzkamm, W. (2003). We only learn language once. The role of the mother tongue in FL classrooms: Death of a dogma. *Language Learning Journal*, *28*(1), 29–39. https://doi.org/10.1080/09571730385200181

Cahyani, H., de Courcy, M., & Barnett, J. (2018). Teachers' code-switching in bilingual classrooms: Exploring pedagogical and sociocultural functions. *International Journal of Bilingual Education and Bilingualism*, *21*(4), 465–479. https://doi.org/10.1080/13670050.2016.1189509

Chan, C. K., & Siegel, L. S. (2001). Phonological processing in reading Chinese among normally achieving and poor readers. *Journal of Experimental Child Psychology*, *80*(1), 23–43. https://doi.org/10.1006/jecp.2000.2622

Conteh, J. (2018). Translanguaging. *ELT Journal*, *72*(4), 445–447. https://doi.org/10.1093/elt/ccy034

Creswell, J. W., & Clark, V. L. P. (2011). *Educational research—Planning, conducting, and evaluating quantitative and qualitative research*. Pearson.

Cummins, J. (1976). *The influence of bilingualism on cognitive growth: A synthesis of research findings and explanatory hypotheses. Working Papers on Bilingualism*, *9*. Ontario Institute for Studies in Education.

Cummins, J. (1979). *Cognitive/academic language proficiency, linguistic interdependence, the optimum age question and some other matters. Working Papers on Bilingualism*, *19*. Ontario Institute for Studies in Education.

Cummins, J. (1980). Construct of language proficiency in bilingual education. In J. E. Alatis (Ed.), *Current issues in bilingual education* (pp. 81–103). Georgetown University Press.

Cummins, J. (1981). The role of primary language development in promoting educational success for language minority students. In California State Department of Education (Ed.), *Schooling and language minority students: A theoretical framework* (pp. 3–50). National Dissemination and Assessment Center.

Cummins, J. (1984). Bilingualism and cognitive functioning. In S. Shapson & V. D'Oyley (Eds.), *Bilingual and multicultural education: Canadian perspectives* (pp. 55–70). Multilingual Matters.

Cummins, J. (2000). Putting language proficiency in its place: Responding to critiques of conversational/academic language distinction. In J. Cenoz & U. Jessner (Eds.), *English in Europe: The acquisition of a third language* (pp. 54–83). Multilingual Matters.

Cummins, J. (2001). *Negotiating identities: Education for empowerment in a diverse society*. *Los Angeles* (2nd ed). California Association for Bilingual Education.

Cummins, J., & Swain, M. (2014). *Bilingualism in education: Aspects of theory, research and practice*. Routledge.

Diaab, S. (2016). Role of faulty instructional methods in Libyan EFL learners' speaking difficulties. *Procedia - Social and Behavioral Sciences*, *232*, 338–345. https://doi.org/10.1016/j.sbspro.2016.10.032

Dillon, A. M. (2009). Metalinguistic awareness and evidence of cross-linguistic influence among bilingual learners in Irish primary schools. *Language Awareness*, *18*(2), 182–197. https://doi.org/10.1080/09658410902928479

Dörnyei, Z. (2003). *Questionnaires in second language research: Construction, administration, and processing*. Mahwah, NJ: Lawrence Erlbaum Associates.

Droop, M., & Verhoeven, L. (2003). Language proficiency and reading ability in first- and second-language learners. *Reading Research Quarterly*, *38*(1), 78–103. https://doi.org/10.1598/RRQ.38.1.4

Dweik, B., & AbuAlHommos, M. (2007). The effect of Arabic proficiency on the English writing of bilingual-Jordanian students. http://files.eric.ed.gov/fulltext/ED497505.pdf

Elbeheri, G., Everatt, J., Mahfoudhi, A. A., Abu Al-Diyar, M., & Taibah, N. (2011). Orthographic processing and reading comprehension among Arabic speaking mainstream and LD children. *Dyslexia*, *17*(2), 123–142. https://doi.org/10.1002/dys.430

Ellis, R. (1986). *Understanding second language acquisition*. Oxford University Press.

Endley, M. J. (2016). Proficiency as a variable in Gulf EFL students' employment of reading strategies. *Reading in a Foreign Language*, *28*, 183–233.

Endley, M. J. (2018). When Arabic speakers read English words. *Arab World English Journal*, *9*(1), 3–22. https://doi.org/10.24093/awej/vol9no1.1

Galali, A., & Cinkara, E. (2017). The use of L1 in English as a foreign language classes: Insights from Iraqi tertiary level students. *Advances in Language and Literary Studies*, *8*(5), 54–64. https://doi.org/10.7575/aiac.alls.v.8n.5p.54

García, G. E. (2000). Bilingual children's reading. In P. Kamil, P. P. Mosenthal, P. Pearson & Barr (Eds.), *Handbook of reading research* (pp. 813–834). Erlbaum.

García, G. E., & Bauer, E. B. (2004). The selection and use of English texts with young English language learners. In J. Hoffman & S. D. L. (Eds.) *The texts in elementary classrooms* (pp. 177–194). Lawrence Erlbaum Associates Publishers.

García, O., & Bartlett, L. (2007). A speech community model of bilingual education: Educating Latino newcomers in the USA. *International Journal of Bilingual Education and Bilingualism*, *10*(1), 1–25. https://doi.org/10.2167/beb364.0

García, O. (2009). Bilingual education in the 21st century: A global perspective. Wiley, Blackwell.

García, O., & Kleifgen, J. A. (2018). *Educating emergent bilinguals: Policies, programs, and practices for English learners*. Teacher's College Press.

Gathercole, S. E., & Baddeley, A. D. (1989). Development of vocabulary in children and short-term memory. *Journal of Memory and Language*, *28*(2), 200–213. https://doi.org/10.1016/0749-596X(89)90044-2

Gee, J. P. (1999). Critical issues: Reading and the new literacy studies: Reframing the National Academy of Sciences report on reading. *Journal of Literacy Research*, *31*(3), 355–374. https://doi.org/10.1080/10862969909548052

Gee, J. P. (2000). Identity as an analytic lens for research in education. *Review of Research in Education*, *25*, 99–125. https://doi.org/10.3102/0091732X025001099

Gort, M. (2006). Strategic codeswitching, interliteracy, and other phenomena of emergent bilingual writing: Lessons from first grade dual language classrooms. *Journal of Early Childhood Literacy*, *6*(3), 323–354. doi:10.1177/1468798406069796

Grosjean, F. (2013). Bilingualism: A short introduction. In F. Grosjean & P. Li (Eds.), *The psycholinguistics of bilingualism* (pp. 5–26). Wiley.

Gupta, A. (2002). Language status planning in the ASEAN countries. In D. Bradley (Ed.), *Language policy, language planning and sociolinguistics in South-East Asia* (pp. 1–14). Pacific Press Linguistics Research School of Pacific and Asian Studies.

Hornberger, N. H. (1992). Biliteracy contexts, continua, and contrasts: Policy and curriculum for Cambodian and Puerto Rican students in Philadelphia. *Education and Urban Society*, *24*(2), 196–211. https://doi.org/10.1177/0013124592024002003

Hornberger, N. H. (2004). The continua of biliteracy and the bilingual educator: Educational linguistics in practice. *International Journal of Bilingual Education and Bilingualism*, *7*(2–3), 155–171. https://doi.org/10.1080/13670050408667806

Jared, D., Cormier, P., Levy, B. A., & Wade-Woolley, L. (2011). Early predictors of biliteracy development in children in French immersion: A 4-year longitudinal study. *Journal of Educational Psychology*, *103*(1), 119–139. https://doi.org/10.1037/a0021284

Jiménez, R. T., García, G. E., & Pearson, P. D. (1996). The reading strategies of bilingual Latina/o students who are successful English readers: Opportunities and obstacles. *Reading Research Quarterly*, *31*(1), 90–112. https://doi.org/10.1598/RRQ.31.1.5

Kecskes, I., & Papp, T. (2003). How to demonstrate the conceptual effect of L2 on Ll? Methods and techniques. In V. Cook (Ed.), *Effects of the second language on the first* (pp. 247–265). Toronto, Canada: Multilingual Matters.

Kirkpatrick, A. (2014). Afterword. In R. Barnard & J. McLellan (Eds.), *Code-switching in University English-medium classes: Asian perspectives* (pp. 214–221). Multilingual Matters.

Koda, K. (2005). *Insights into second language reading: A cross-linguistic approach*. Cambridge University Press.

Kvale, S. (2007). *Doing interviews*. SAGE.

Lasagabaster, D. (2001). The effect of knowledge about the L1 on foreign language skills and grammar. *International Journal of Bilingual Education and Bilingualism*, *4*(5), 310–331. https://doi.org/10.1080/13670050108667735

Leafstedt, J. M., & Gerber, M. M. (2005). Crossover of phonological processing skills. *Remedial and Special Education*, *26*(4), 226–235. https://doi.org/10.1177/07419325050260040501

Lewis, G., Jones, B., & Baker, C. (2012). Translanguaging: Origins and development from school to street and beyond. *Educational Research and Evaluation*, *18*(7), 641–654. https://doi.org/10.1080/13803611.2012.718488

Mady, C. (2017). The bilingual advantage for immigrant students in French immersion in Canada: Linking advantages to contextual variables. *International Journal of Bilingual Education and Bilingualism*, *20*(3), 235–251. https://doi.org/10.1080/13670050.2015.1041875

Mahmoud, A. (2000). Modern standard Arabic vs. non-standard Arabic: Where do Arab students of EFL transfer from? *Language, Culture and Curriculum*, *13*(2), 126–136. https://10.1080/07908310008666594

Martin-Rhee, M. M., & Bialystok, E. (2008). The development of two types of inhibitory control in monolingual and bilingual children. *Bilingualism: Language and Cognition*, *11*(1), 81–93. https://doi.org/10.1017/S1366728907003227

May, H. T. (2004). *Bilingual/immersion education: Indicators of good practice*. Ministry of Education, New Zealand.

Midgette, E., & Philippakos, Z. A. (2016). Biliteracy, spelling, and writing: A case study. *Language and Literacy Spectrum*, *26*, 13–30.

Mokhtari, K., & Reichard, C. (2004). Investigating the strategic reading processes of first and second language readers in two different cultural contexts. *System*, *32*(3), 379–394. https://doi.org/10.1016/j.system.2004.04.005

Mthetwa, P. (2017). The Cognitive Interface: Cross-linguistic Influence between SiSwati and English. *TESOL International Journal*, 11(2), 1-14.

Mumtaz, S., & Humphreys, G. (2001). The effects of bilingualism on learning to read English: Evidence from the contrast between Urdu-English bilingual and English monolingual children. *Journal of Research in Reading*, *24*(2), 113–134. https://doi.org/10.1111/1467-9817.t01-1-00136

Ng, E. (2013). Bilingualism, biliteracy and cognitive effects: A review paper. *University of Sydney Papers in TTESOL*, *10*, 93–127.

Nieto, S. (2000). *Affirming diversity: The sociopolitical context of multicultural education* (3rd ed). Longman.

Niyekawa, A. M. (1983). Biliteracy acquisition and its sociocultural effects. In M. C. Chang (Ed.), *Asian and Pacific-American perspectives in bilingual education* (pp. 97–119). Teacher's College Press.

O'Sullivan, A. (2004). Reading and Arab college students: Issues in the United Arab Emirates higher colleges of technology. http://readingmatrix.com/onlineconference/proceedings2004.html

O'Sullivan, K. (2015). Bilingual education-mismatch between policy and practice in the UAE? *International Journal of Arts & Sciences, 8*, 425–438.

Owens, R. E. (2012). *Language development: An introduction* (10th ed). Pearson.

Qian, D. D. (2002). Investigating the relationship between vocabulary knowledge and academic reading performance: An assessment perspective. *Language Learning*, *52*(3), 513–536. https://doi.org/10.1111/1467-9922.00193

Shen, M. (2018). A Study of Actual Behaviours of EFL Non-English Majors' Lexical Inferencing. *The Asian EFL Journal Quarterly*, 19(3), 49-66.

Skutnabb-Kangas, T. (2000). *Linguistic genocide in education or worldwide diversity and human rights?* Lawrence Erlbaum Associates.

Somers, T. (2017). Content and language integrated learning and the inclusion of immigrant minority language students: A research review. *International Review of Education*, *63*(4), 495–520. https://doi.org/10.1007/s11159-017-9651-4

Sparks, R., Patton, J., Ganschow, L., & Humbach, N. (2009). Long-term crosslinguistic transfer of skills from L1 to L2. *Language Learning*, *59*(1), 203–243. https://doi.org/10.1111/j.1467-9922.2009.00504.x

Wallner, K. (2016). *The effects of bilingualism on language development of children*. Rock Island, IL: Communication Sciences and Disorders: Student Scholarship & Creative Works.

Wang, M., Yang, C., & Cheng, C. (2009). The contributions of phonology, orthography, and morphology in Chinese–English biliteracy acquisition. *Applied Psycholinguistics*, *30*(2), 291–314. https://doi.org/10.1017/S0142716409090122

Yang, M., Cooc, N., & Sheng, L. (2017). An investigation of cross-linguistic transfer between Chinese and English: A meta-analysis. *Asian-Pacific Journal of Second and Foreign Language Education*, *2*(1), 1–21. https://doi.org/10.1186/s40862-017-0036-9

Zhang, S. Z., Inoue, T., Shu, H., & Georgiou, G. K. (2020). How does home literacy environment influence reading comprehension in Chinese? Evidence from a 3-year

longitudinal study. *Reading and Writing*, *33*(7), 1745–1767. https://doi.org/10.1007/s11145-019-09991-2

Pre-Service Teachers' perceptions on 'Google Translate' as a Tool for English Language Learning

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Abstract

The objective of this study was to investigate English pre-service teachers' perceptions of Google Translate (GT) as a language-learning tool. The study adopted a survey approach and involved 93 Teaching English speakers of Other Languages (TESOL) pre-service teachers. The participants were randomly selected from two universities in Malaysia and Indonesia. The collected data was analyzed by performing the descriptive analysis (percentage and frequency) using SPSS version 26. The findings show that students have positive attitudes towards GT as a language-learning tool based on usefulness, ease of use, accuracy, and use. The study has implications for teachers and students.

Keywords: Google Translate, English Language Learning, and Pre-Service Teachers

1. Introduction

1.1 Background of Study

Technology has been proven to assist students in improving language learning by offering various applications (Habeeba, & Muhammedb, 2020). One of the aspects of technology is machine translation, which is increasingly gaining popularity. One of the machine translation applications widely used recently is Google translate and is available on many devices (GT) (Allué, 2016; Mundt & Groves, 2016; Gestanti, Nimasari, & Mufanti, 2019).

GT is a statistical system that helps users translates from and to a wide array of languages. GT is a service provided by Google Incorporation to translate words, phrases, sentences, paragraphs, or even a whole text or web page from one language to another (Noviarini, 2021; Stapleton & Kin, 2019). Students use it for different purposes, including language learning academic writing (Alhaisoni, & Alhaysony, 2017). GT has seen many improvements following the introduction of artificial neural network-based neural machine translate system into the GT system (Đerić, 2020). GT has been facilitating the translation of texts for the users; however, the accuracy of its translation is still in question (Stapleton & Kin (2019).

Several factors impact the use of GT, such as usefulness, ease of use, accuracy, and attitude, etcetera. Although GT has a leading role in the translation of texts, the academic literature fails to acknowledge what factors contribute to the intention of users to use GT (Yang, and Wang, 2019). Only a handful of studies have looked at the student teachers' perceptions of GT.

1.2 Research Objective

The objective of this study was to investigate pre-service teachers' perceptions of Google Translate (GT) as an English language-learning tool. In the Asian language learning context, student teachers use GT for different purposes (Bahri and Mahadi, 2016; Septiadi, 2019). However, very little knowledge is available regarding the factors predicting the use of GT in the process of language learning.

2. Literature Review

2.1 Technology Acceptance Model (TAM)

The technology acceptance model (TAM) is referred to as an information system (IS) theory that explains and predicts how users accept and use technology (Davis, 1989). Davis developed TAM based on the theory of Reason Action (Ajzen,1975).TAM components comprise perceived usefulness, perceived ease of use, attitude towards use, behavioral intention to use, and actual system use, as illustrated in Figure 1. Usefulness is connected with the

functionalities and features of technology. Davis (1989) defines perceived usefulness (PU) as: "the degree to which a person believes that using a particular system would enhance his or her job performance" (p.320). He defines perceived ease of Use (PEOU) as: "the degree to which a person believes that using a particular system would be free of effort" (p.320). According to, Djiwandono, P. I. (2019,p. 611), "Perceived usefulness refers to the extent to which teachers believe that digital technology will help them accomplish their work efficiently and effectively. Perceived ease of use refers to the extent to which teachers believe that they do not have to deal with many troubles and efforts in using the high technology".

There is a strong relationship between PU and PEOU across various kinds of technologies: social media (Dumpit & Fernandez, 2017), machine translation (Yang, & Wang, 2019), Google Translate (Al-Maroof, Salloum, AlHamadand, & Shaalan, 2020), etcetera. Attitude is affectively associated with an individual's evaluation and beliefs about the object of behavior (Ajzen, 1975). Behavioral intention directly affects the actual use of a system (Davis et al., 1989). Actual system use is regarded as the end-point in which people make use of the technology. Due to its robustness, applicability, and simplicity in predicting and explaining the acceptance and adoption of technology, a considerable amount of literature has been published on the use of TAM to assess users' adoption and use of technology (Al-Maroof, Salloum, AlHamadand, & Shaalan, 2020; Dumpit & Fernandez, 2017; Lai, 2017; Surendran, 2012; Yang, & Wang, 2019). Alhaisoni and Alhaysony (2017) looked at English as a Foreign Language (EFL) students' perceptions of GT involving 92 students. The findings showed that almost all students used GT for three purposes: reading textbooks, writing assignments, and vocabulary to understand new words.

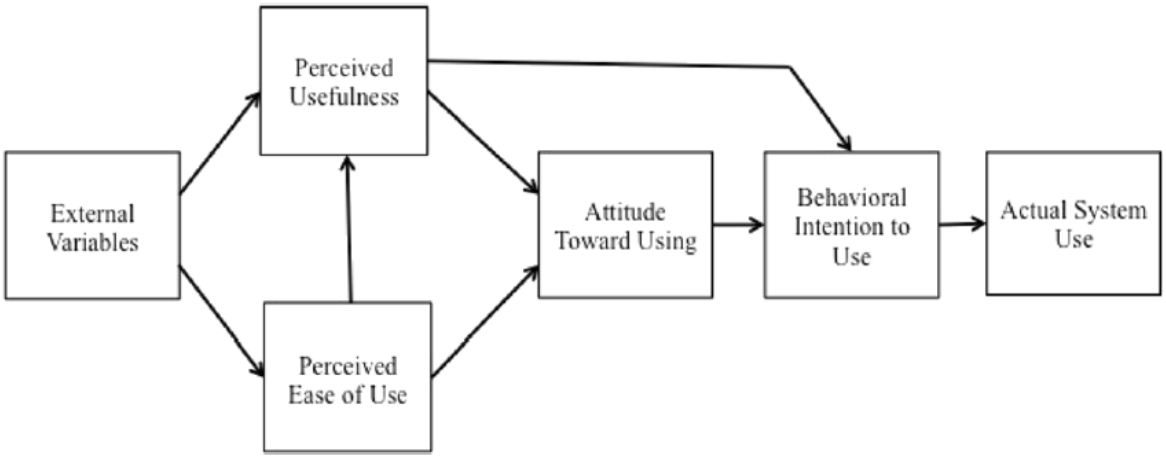

Figure 1: Technology acceptance model (Davise, 1989)

Al-Maroof et al. (2020) investigated the acceptance of GT by extending TAM and involving 368 students in a survey. Findings showed that PU, PEOU, and motivation

significantly influenced the behavioral intention to use GT. PU and motivation significantly impacted PEOU. PU and experience had a strong relationship. Yang and Wang (2019) assessed a model developed based on TAM using a survey involving 109 students. The study found that PU has a substantial impact on Behavioral intention to use MT. PU was also significantly influenced by experience. PEOU affects motivation, and motivation influences experience. Indonesia, Septiadi (2019) sought students' perceptions' of GT by involving 111 university students in a survey. The study results indicated that students had positive attitudes towards GT. 48.3 showed that they often use GT. However, few students accepted that they are dependent on GT.

Concerning ease of use of GT, Habeeba and Muhammed (2020) investigate the effectiveness, advantages, and disadvantages of Google Translate using a survey involving 50 students in a survey. They found that students had positive attitudes towards GT. The advantages of GT were low cost, quick translation, ease to access) Furthermore, the disadvantages were grammatical mistakes and a lack of proofreading tools. Brahmana, Sofyan & Putri (2020) conducted a survey study involving ten students to examine their problem in using GT. The biggest issue was inaccuracy and mismatch of the meaning (31%) inaccuracy of language structure (%30). Dalimunthe (2020) discussed the advantage and obstacles of using GT from students' perspectives by distributing the questionnaire to 20 university students. The findings showed that students appreciated GT for being fast, easy, and straightforward. The obstacles are that sometimes the translation is not accurate. Another critical factor that may affect the use of GT by students is accuracy.

2.2 GT Use

A crucial element of the TAM model is the use of technology. Serval studies have looked at the implementation of GT for different purposes in the process of language learning (Bin Dahmash, 2020; Djiwandono, 2019; Way, 2021; Yuyu, 2018). Using a mixed-mode study, Djiwandono (2019) investigated 110 teachers' attitudes to ICT, including GT. The survey findings showed that the participants had positive attitudes towards ICT and found it as a learning source, fostering communication and collaboration for teaching and learning. Bin Dahmash (2020) interviewed students regarding their use of GT and found that GT supports their writing and can be a language learning resource. Chandra and Yuyun (2018) adopted writing tasks, observation, and interviews involving students. They found that the students used GT for spelling, grammar, and vocabulary, and phrases. Resend and Way (2021) survey 90 Brazilian EFL students to investigate their use of GT. The study found that the participants use GT to speak and as a source of learning English vocabulary.

Alimi (2018) investigated GT lectures' use concerning awareness, access, and competence through a survey involving 1,042 participants. It was found that 74.1% of participants were aware of GT use, 55.4% had access at work, and 44.6% at home, and they were not competent in the use of GT. Chen (2020) investigated EFL students' GT use through a survey and found that they mostly used GT for paragraph and whole-text translation. They also had a positive attitude towards using GT. Bahri and Mahadi (2016) examined students' GT use by distributing questions to 16 international students. The findings showed that participants use GT for reading, vocabulary learning, and writing in the Malay Language. GT also helps them in problem-solving independent learning.

2.3 Accuracy

Accuracy of a machine translation refers to the level to which the text translated retains the original text meaning (Trujillo, 1999). It is connected with translation quality, intelligibility, and system reliability (Arnold, Balkan, Humphreys, 1994; Lunic et al., 2020). Concerning GT accuracy, the factors of reliability, intelligibility, and quality of translation are taken into account.

Allué (2016) evaluated the reliability of GT translation in a small-scale study comparing translations of tourist texts and football match reports. The errors were syntactic, lexicogrammatical, pragmatic, and punctuation levels. Cahyaningrum and Widiyantari (2018) found that the quality of translation on GT was better in terms of quality acceptability than SDL and Tradukka. Handoyo (2019) examined the use of GT for translating thesis abstracts for the Indonesian language into English. The findings indicated that GT translation had significant errors. Medvedev (2016) discussed the use of GT for translating vocabulary items and reported that it has a high level of accuracy. Prihastuti (2018) examined the GT accuracy of the student teachers' texts by examining documents from students' revisions. It was found that the student teachers had limited error sensitivity in using GT. Tsai (2019) examined the accuracy of GT for translating from and into Chinese and English involving EFL students. The finding indicated that GT translation had a better quality than students produced text in spelling, grammar, and word error. GT text had more advanced-level words.

Besides, the survey also showed that students had positive attitudes towards GT translation. (Prihastuti (2018) examined the GT accuracy of the student teachers' texts by examining documents from students' revisions. It was found that the student teachers had limited error sensitivity in using GT. Tsai (2019) found that students were satisfied with GT output regarding finding vocabulary items and enhancing the completion of English writing. An essential aspect of any technology is the end-point that is its use by the users.

2.3 Research Questions

Following the literature review, the research question is formulated as follows:

1) What were the pre-service teachers' perceptions of Google Translate as a tool for English language learning?

3. Methodology

3.1 Sampling Approach

The study selected 93 participants from two universities, an Indonesian university and a Malaysian university, through purposive sampling from pre-service teachers. The rationale for adopting the nonprobability purposive sampling method is to access the participants who have required information to collect data to address the research questions (Creswell & Poth, 2016). It involved those pre-service teachers who were using GT in the process of academic writing.

3.2 Research instrument

The research instrument was a questionnaire comprised of demographics and behavioral intention. The section related to behavioral intention consisted of four constructs, namely, Use (13 items) using Lickert Scale (always, often, sometimes, seldom, never), accuracy (4 items), PU (5 items), and PEOU (2 items) based on Lickert Scale (Strongly agree=1, agree=2, neutral=3, disagrere=4, strongly disagree=5). The questionnaire was adapted from previous studies (Al-Maroof, Salloum, AlHamadand, & Shaalan, 2020; Yang & Wang, 2019).

3.3 Research Procedure

The study adopted a survey approach by involving 93 pre-service teachers. A survey questionnaire constructed in Google Forms was sent to the student teachers through emails and WhatsApp. The participants answered the questions and returned in a week. The obtained data was saved in excel format and was transferred to SPSS version 26 for data analysis.

3.4 Techniques of Analyzing Data

The obtained data were analyzed using descriptive analysis in SPSS (frequency and percentage) to investigate student teachers' perception of GT for English language learning.

4. **Result**

This section presents the result of data analysis, including demographics, descriptive and inferential statistics.

Table 1: Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	6	6.5	6.5	6.5
	Female	87	93.5	93.5	100.0
	Total	93	100.0	100.0	

Table 1 demonstrates the gender of participants. It is seen that 87 females (93.5%) and six males (6.5%) participated in the study.

Table 2: Frequency of GT use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Seldom	1	1.1	1.1	1.1
	Sometimes	54	58.1	58.1	59.1
	Often	16	17.2	17.2	76.3
	Always	22	23.7	23.7	100.0
	Total	93	100.0	100.0	

Table 2 illustrates the frequency of using GT by the participants. Around 58% (54) indicated that they sometimes use GT, while about 23.7% (22) accepted that they always use GT, followed by 17.2% (16) and 1.1% (1) who acknowledged that they use it often or seldom use GT, respectively.

Table3: Descriptive analysis of the use of GT

No.	Question	A	O	S	Se	N
1	I use Google Translate for assignments in the English Language classroom.	14	16	**57**	4	2
2	I use Google Translate for projects and reports in the English language classroom.	9	16	**61**	4	3
3	I use Google Translate to find the meaning of 'word' from my first language into English.	**23**	**26**	38	3	3
4	I use Google Translate to find the meaning of 'word' from English into my first language.	17	**24**	44	6	2
5	I use Google Translate to find the meaning of 'phrase' from my first language into English.	11	28	46	4	4
6	I use Google Translate to find the meaning of 'phrase' from English into	10	21	**53**	6	3

	my first language.					
7	I use Google Translate to find the meaning of 'clause' from my first language into English.	13	20	52	5	3
8	I use Google Translate to find the meaning of 'clause' from English into my first language.	10	17	52	10	4
9	I use Google Translate to find the meaning of 'sentence' from my first language into English.	10	18	55	8	2
10	I use Google Translate to find the meaning of a 'paragraph' from my first language into English.	12	20	43	12	6
11	I use Google Translate to find the meaning of a 'paragraph' from English into my first language.	13	18	49	6	7
12	I use Google Translate to find the meaning of a 'whole text' from my first language into English.	12	19	41	12	19
13	I use Google Translate to find the meaning of a 'whole text' from English into my first language.	10	14	52	9	8
	Average	12.61	19.76	49.46	6.84	5.07
	Percentage	13.55	21	53	7	5.45

A=Always, O=Often, S=Sometimes, Se-Seldom, and N=Never

Table 3 demonstrates that students use GT for doing assignments, reports, and projects with the focus on the meaning of 'word,' 'phrase,' 'clause,' 'sentence,' a 'paragraph,' 'and whole text' from English into the first language and vice versa. It is seen that students use GT to find the meaning of 'word' from their first language into English with the frequency of always (23), often (26), and sometimes(38). Another item selected with high frequency is the user of GT to find the meaning of the word from English into their first language with the frequency of always (17), often (24), and sometimes (44). Another item with high frequency is the use of GT for doing an assignment with the frequency of always (14), often (16), and sometimes (57). The item with the minor frequency is the use of GT to translate whole text from English to first

language (always=10, often=14). Sixty-one student teachers acknowledged that they sometimes use GT for doing projects and reports. Nineteen students strongly disagreed that they use GT to translate the whole text from the first language into English. It was found that the average frequency of always, often, sometimes, seldom, and never was 12.61, 19.76,

49.46, 6.84, and 5.07, respectively. This indicates that the highest frequency belongs to 'often,' while the lowest frequency is attributed to 'never. This shows that they overall often use GT for different academic purposes in the process of language learning.

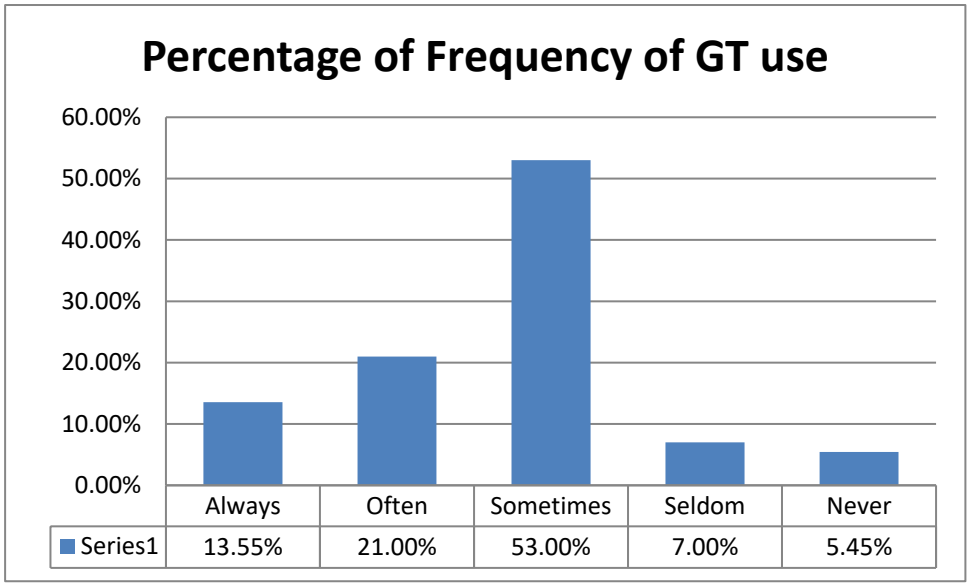

Figure 3: The percentage of Frequency of GT use

Figure 3 illustrates the percentage of frequency of GT use by student teachers. It is indicated that 53% of participants sometimes use GT. 13.55% always utilize this app, and 21% often use this GT.7% seldom use it, and 5.45% never use GT for academic purposes.

Table 4: Descriptive analysis of PU

No.	Question	SA	A	N	DA	SDA
1	Google Translate has helped me to a large extent in gaining higher grades in assignments.	9	49	31	2	2
2	Google Translate has helped me immensely in the process of learning the English language.	9	49	28	3	3

3	Google Translate helps me in writing an error-free English assignment.	5	45	36	5	2
4	Without Google Translate, I cannot complete the assignment in English.	9	32	42	7	3
5	I cannot do well in English language learning if I do not use Google Translate.	5	42	31	11	4
	Average	7.4	43.4	33.6	5.6	2.8
	Percentage	8	47	36	6	3

SA=Strongly Agree, A=Agree, N=Neutral, DA=Disagree, SDA=Strongly Disagree

Table 4 demonstrates that pre-service teachers perceive GT as applicable in terms of helping them to gain higher grades in an assignment, learn the language is in the process of learning the English language, write an error-free English assignment, complete the assignment in English, and be dependent on GT and do well in English language learning. The items with the highest frequency of agreement are ‘gaining higher grades in assignment and 'heling in the process of learning the English language' with the frequency of 49 each, followed by the 'helping in writing error-free assignment in English’ and ‘depending on GT and doing well in language learning’ with frequencies of 45 and 42, respectively, while 32 student teachers agreed that they could not do the assignment without GT. The average frequency of 'strongly agree,' 'agree,' 'neutral,' disagree,' and 'strongly disagree' are 7.4, 43.4, 33.6, 5.6, and 2.8. This indicates that a significant number of participants agree that GT is helpful for academic purposes. However, a small number of student teachers, around 9, disagreed that GT is helpful for language learning.

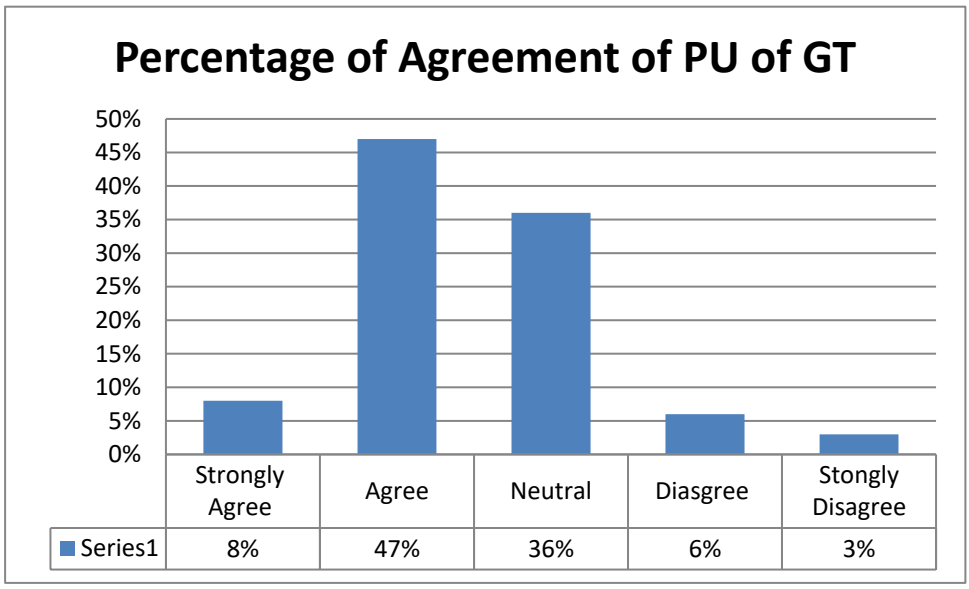

Figure 4: Percentage of agreement of PU of GT

Figure 4 illustrates the percentage of agreement of PU of GT from student teachers' perspectives. The highest percentage belongs to 'agree' (47%) followed by 'neutral' (36%), while the lowest percentage is related to 'strongly disagree' (3%). This suggests that around half of students agree that GT is helpful for language learning in an academic context, whereas only 9% disagree that GT is helpful for language learning.

Table 5: Descriptive analysis of PEOU

No.	Question	SA	A	N	DA	SDA
1	The speed of Google Translate is better than human translation.	9	41	35	5	2
2	Google Translate is the easiest and fastest way to score good grades in English.	7	43	36	4	3
	Average	8	42	35.5	4.5	2.5
	Percentage	9	45	38	5	3

SA=Strongly Agree, A=Agree, N=Neutral, DA=Disagree, SDA=Strongly Disagree

Table 5 demonstrates that student teachers perceive GT better than human translation regarding speed and ease of use and good grades in the English assignment. Forty-three participants agreed that "GT is the easiest and fastest way to score good grades in English," and 41 pre-service teachers also agreed that 'the speed of GT is better than human translation,' with 36 and 35 participants had neutral views concerning the items as mentioned earlier, respectively. The findings show that the average of 'Strongly agree,' 'agree,' 'neutral,' 'disagree,' and 'strongly disagree' are 9, 42, 38, 5, and 3, respectively. This fact shows that a significant

number of students agree that GT is fast and easy to use to learn the language, while a small number (7) had opposing views regarding the PEOU of GT. However, the number of those with neutral attitudes towards PEOU of GT was notable.

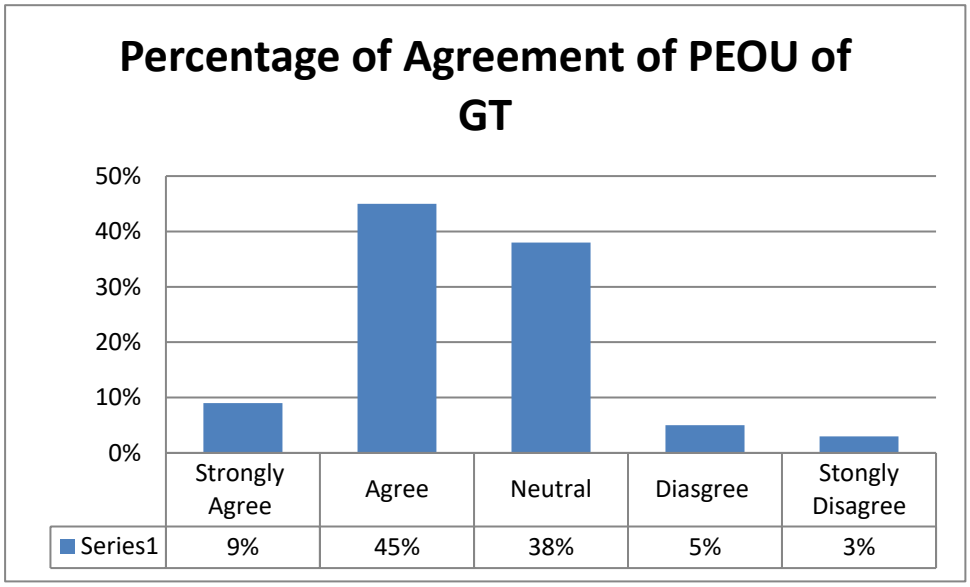

Figure 5: The percentage of agreement of PEOU of GT

Figure 5 illustrates the percentage of agreement of PEOU of GT from student teachers' perspectives. The highest percentage (45%) belongs to 'agree,' while the lowest percentage is associated with 'strongly disagree.' This result indicates that most students agree upon the easiness and fastness of GT for doing assignment and language learning; however, 38% held neutral views regarding PEOU of GT, which is considerable.

Table 6: Descriptive analysis of accuracy of GT

No.	Question	SA	A	N	DA	SDA
1	The accuracy of Google Translate is not the same as human translation.	9	48	35	1	0
2	I rely primarily on google Translate to learn English.	7	43	37	2	4
3	I rely primarily on google Translate to write assignments, projects, and reports.	5	40	41	5	2
4	The accuracy level of Google Translate meets the requirement of English assignments.	8	39	42	4	0
	Average	7.25	42.5	38.75	3	1.5
	Percentage	7.79	45.69	41.66	3.22	1.6

SA=Strongly Agree, A=Agree, N=Neutral, DA=Disagree, SDA=Strongly Disagree

Table 6 demonstrates student teachers' perceptions of the accuracy of GT by comparing it with that of humans, relying on it to learn the language, write an assignment, projects, and reports, and acknowledging that accuracy of GT as meeting the requirement of an English assignment. Data shows that 48 participants agree that ‘the accuracy of GT is not the same as human translation’ and 43 student teachers agree that they rely on GT to learn the language, followed by 40 who acknowledge that they rely on GT to create assignment, projects and reports and 39 respondents who claim that GT accuracy meets the requirement of an English assignment. Overall, the average of ‘strongly agree’, ‘agree’, ‘neutral’, ‘disagree’, and ‘strongly disagree’ are 7.25, 42.5, 38.75, 3, and 1.5, respectively. This indicates that around 42 student teachers agree that GT accuracy can help them meet the academic requirement. However, 48 participants believed that Gt output is not as accurate as human translation. In addition, 38.75 were not sure about the accuracy of GT, which is notable.

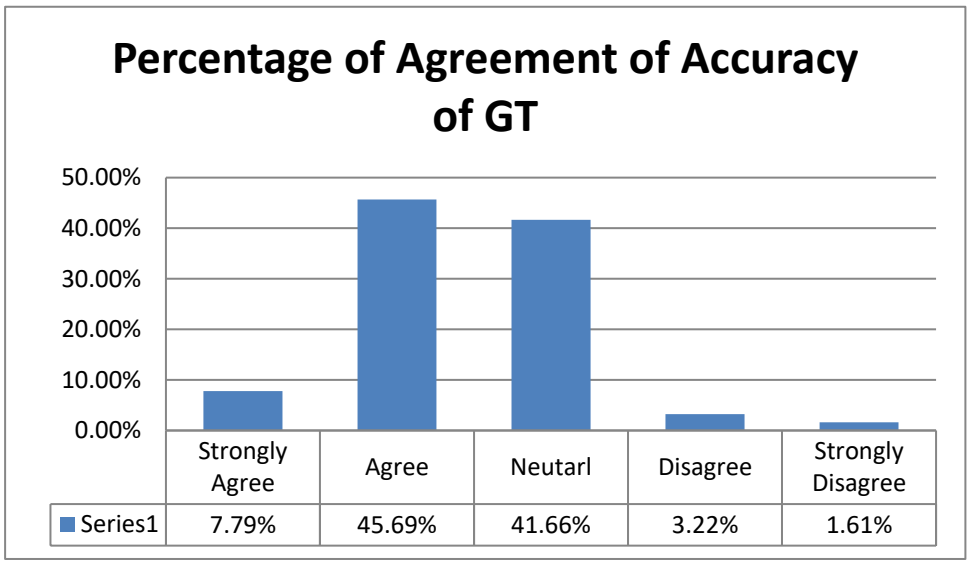

Figure 6: The percentage of agreement of Accuracy of GT

Figure 6 illustrates the percentage of agreement of accuracy of GT from the perspectives of student teachers. The highest percentage belongs to 'agree' (45.69%), while the lowest percentage is related to 'strongly disagree' (1.61%). This result shows that around half of student teachers agree that the accuracy of GT meets the requirement of their English learning. However, 41.66% held a neutral position concerning the accuracy of GT, which is considerable.

5. Discussion

This study investigated student teachers' perceptions of GT in language learning. Findings demonstrate that students use GT for doing assignments, reports, and projects with the focus on finding the meaning of 'word,' 'phrase,' 'clause,' 'sentence,' a 'paragraph,' 'and whole text' from English into the first language and vice versa using GT. the findings of this study is consistent with the literature in terms of using GT for writing assignment and projects and reports in the language learning process (Bahri & Mahadi, 2016; Dahmash, 2020; Chen, 2020; Djiwandono, 2019). This study found that students mainly use GT to find the meaning of the word from and into English consistent with the literature (Chandra &Yuyun, 2018; Resend & Way, 2021).

The pre-service teachers less frequently use GT to translate the whole paragraph of text, contrasting the findings of a study by Chen (2020), who reported that his participants use GT mainly for translating whole paragraphs of text. This study indicated that around 12% of pre-service teachers rarely use GT in writing assignments and projects and language learning, which is partially consistent with Alimi's (2018) findings, who reported that around 16% of the participants were not using GT.

However, this study indicates that 53% of student teachers sometimes use GT for academic purposes. The justification might be that they may have technophobia or do not trust the accuracy of GT output for language learning. Many student teachers believed that GT translation is not comparable with that of human translation, which might have affected their use of GT. Overall, students were in favor of GT for doing assignments and projects regardless of the accuracy of the GT output, which is consistent with the data on the literature (Prihastuti, 2018; Tsai, 2019). However, a considerable number of participants neither agree nor disagree with the accuracy of GT, and this dilemma might be another reason for a less satisfactory use of GT.

Another factor that plays an essential role in using GT is the PU of this app. It was indicated that pre-service teachers perceive GT as applicable in gaining assignments and gaining high marks, learning a language, and producing error-free assignments. Some students heavily rely on GT for doing assignments and language learning (Al-Maroof et al., 2020; Septiadi, 2019; Yang & Wang, 2019). However, a substantial number of participants held a neutral view of PU of GT, and a small percentage disagreed that GT is helpful for language learning. The explanation might be that they may not trust the accuracy of GT.

Another encouraging factor is the speed and easiness of using GT to find a translation of words and phrases in doing assignments and projects, which were mentioned by most

participants consistent with the literature (Al-Maroof et al., 2020; Yang & Wang, 2019). However, a considerable neither number of student teachers nor agree neither disagree concerning the PEOU of GT. the justification might be that they may not trust the app's accuracy, or they might have technical issues such as internet connection problems.

6. Conclusion

This study investigated the perceptions of Malaysian and Indonesian TESOL pre-service teachers of GT used in language learning. The study indicated that the usefulness of GT is the driving force of using GT for pre-service teachers doing in doing assignments, projects, and reports.

The current study only involved 93 student teachers in a survey study. A study with more participants using a mixed-method might be of interest to explore participants' voices through interviews to add to the validity of survey data—test of the accuracy of GT output for Malaysian and Indonesian languages maybe another future research area. A comparison of perceptions of GT determinant factors between Malaysian and Indonesian students may be suggested. The study findings show that TAM's main elements, PU and PEOU, are significant in using GT. this indicates that TAM theory is supported in this study, although some student teachers were not sure about the PU and PEOU of GT even disagreed upon that. Overall, this theory with the added element (accuracy) lays the foundation of this study.

7. Recommendation

The use of GT or academic purpose by students is inevitable as GT is growingly being used across disciplines globally. However, the use of GT might clash with the policy of higher education, and particularly the issues of academic misconduct and plagiarism may arise (Mundt & Groves, 2016). There is an argument that GT may narrow down students' sensitivity to accuracy as students need to be aware of the errors of GT results (Prihastuti, 2018). It is recommended that student teachers do self-correction and check the meanings of suspected words in online dictionaries (Longman, Oxford) and choose following the context (Brahmana, Sofyan, & Putri, 2020; Calanoga, & Arellano-Tamayo, 2019). Lecturers should accept the reality that GT is growingly becoming popular among students. Thus they may facilitate students' use of GT and bring to their attention the accuracy of GT output. They should also alert students of the plagiarism issue using paragraphs and texts from other sources without citing them.

References

Alhaisoni, E., & Alhaysony, M. (2017). An investigation of Saudi EFL university students' attitudes towards the use of Google Translate. *International Journal of English Language Education, 5(1), 72-82. https://doi.org/10.5296/ijele.v5i1.10696*

Allué, B. R. (2016). The reliability and limitations of google translate: a bilingual, bidirectional and genre-based evaluation. Entreculturas. *Revista De Traducción Y Comunicación Intercultural, (9), 67-80. https://doi.org/10.24310/Entreculturasertci.vi9.11240*

Al-Maroof, R. S., Salloum, S. A., AlHamadand, A. Q. M., & Shaalan, K. (2020). Understanding an Extension Technology Acceptance Model of Google Translation: A Multi-Cultural Study in United Arab Emirates. *International Journal of Interactive Mobile Technologies (iJIM) 14(3), 157-178. https://doi.org/10.3991/ijim.v14i03.11110*

Bin Dahmash, N. (2020). 'I Can't Live Without Google Translate': A Close Look at the use of Google Translate App by Second Language Learners in Saudi Arabia. *Arab World English Journal 11(3), 226-240. https://doi.org/10.24093/awej/vol11no3.14*

Bahri, H., & Mahadi, T. S. T. (2016). Google Translate as a Supplementary Tool for Learning Malay: A Case Study at Universiti Sains Malaysia. *Advances in Language and Literary Studies, 7(3), 161-167. https://doi.org/10.7575/aiac.alls.v.7n.3p.161*

Brahmana, C. R. P. S., Sofyan, R., & Putri, D. M. (2020). Problems In The Application Of Google Translate As A Learning Media In Translation. *Language Literacy: Journal of Linguistics, Literature, and Language Teaching*, *4*(2), 384-389. *https://doi.org/10.30743/ll.v4i2.2893*

Cahyaningrum, I. O., & Widiyantari, Y. (2018). Comparison of Translation Quality between Google Translate, SDL Free Translation and Tradukka in the Health Article Entitled Vaginal Birth After Caesarean. *2nd English Language and Literature International Conference (ELLiC) Proceedings, 2 (July), 521 – 525.* https://jurnal.unimus.ac.id/index.php/ELLIC/article/view/3583/3410

Calanoga, M. C. M., & Arellano-Tamayo, R. (2019). Error Analysis of Student Interns' Reflective Journals: Basis for a Grammar Remediation Class. Asian EFL Journal, 23(3.2), 220-236.

Chandra, S. O., & Yuyun, I. (2018). The use of google translate in EFL essay writing. LLT Journal: A Journal on Language and Language Teaching, 21(2), 228-238. https://doi.org/10.24071/llt.2018.210212

Creswell, J. W., & Poth, C. N. (2016). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches (4th Edition)*. Sage publications.

Dalimunthe, A. (2020). Benefits of use google translate in learning English language: English education students' UIN north Sumatra. *Proceeding Paper of English and Technology, (January), 1 – 8.*

Lunić, D., Stanišić, N., Njeguš, A., Đerić, I. (2020). Google Translate Accuracy Evaluation. Paper presented at Sinteza 2020 - International Scientific Conference on Information Technology and Data Related Research. https://doi.org/10.15308/Sinteza-2020-80-85

Noviarini, T. (2021). The translation results of google translate from Indonesian to English. *Jurnal Smart, 7(1), 21-26. https://ejournal.umpri.ac.id/index.php/smart/article/view/1335/747*

Arnold, D. L. Balkan, R. Humphreys, S.(1994). *Meijer and L. Sadler, Machine Translation: An Introductory Guide.* Oxford: NCC Blackwell.

Chen, W. (2020). Using Google Translate is an authentic translation task: the process, refinement efforts and student perceptions. *Current Trends in Translation Teaching and Learning E, 7, 213-238. 10.51287/cttl_ e_ 2020 _7_cheryl_chen_wei-yu.pdf*

Djiwandono, P. I. (2019). How language teachers perceive information and communication technology. *Indonesian Journal of Applied Linguistics, 8(3), 607-615. https://doi.org/10.17509/ijal.v8i3.15260*

Ducar, C., & Schocket, D. H. (2018). Machine translation and the L2 classroom: Pedagogical solutions for making peace with Google translate. *Foreign Language Annals, 51(4), 779-795. https://doi.org/10.1111/flan.12366*

Dumpit, D. Z. & Fernandez, C. J. (2017). Analysis of the use of social media in Higher Education Institutions (HEIs) using the Technology Acceptance Model. *Int J Educ Technol High Educ* ***14 (****5), 1 - 16. https://doi.org/10.1186/s41239-017-0045-2*

Gestanti, R. A., Nimasari, E. P., & Mufanti, R. (2019). Re-overviewing Google Translate Results and Its Implication. *Asian EFL Journal, 23(3.2), 5 – 15.*

Habeeba, L. S., & Muhammedb, M. R. (2020). Investigating the Effectiveness of Google Translate Among Iraqi Students. *International Journal of Innovation, Creativity, and Change. 12 (12), 104 – 116. https://www.ijicc.net/images/vol12/iss12/121231_Habeeb_2020_E_R.pdf*

Handoyo, J. (2019). Error Translation by Google Translate in Thesis Abstract by Widya Kartika

University's Non-English Department Students Issued in 2018. Seminar Nasional Ilmu Terapan (SNITER) Proceedings, 1 (1), B5-1 – B5-3. https://ojs.widyakartika.ac.id/index.php/sniter/article/view/151/142.

Lai, P. C. (2017). The literature review of technology adoption models and theories for the novelty technology. *JISTEM-Journal of Information Systems and Technology Management, 14(1), 21-38. https://doi.org/ 10.4301/s1807-17752017000100002*

Medvedev, G. (2016). Google translate in teaching English. *Journal of Teaching English for Specific and Academic Purposes, 4(1), 181-193. http://espeap.junis.ni.ac.rs/index.php/espeap/article/view/318/221*

Mundt, K., & Groves, M. (2016). A double-edged sword: the merits and the policy implications of Google Translate in higher education. *European Journal of Higher Education, 6(4), 387-401. https://doi.org/10.1080/21568235.2016.1172248*

Prihastuti, Y. S. (2018) Student-Teacher's Language Awareness: An Analysis Of Google Translate Results Revision. International Journal of Educational Science and Research (IJESR), 8(3), 55 – 66.

Resende, N., & Way, A. (2021). Can Google Translate Rewire Your L2 English Processing?. *Digital, 1(1), 66-85. https://doi.org/10.3390/digital1010006*

Surendran, P. (2012). Technology acceptance model: A survey of literature. International Journal of Business and Social Research, 2(4), 175-178. https://doi.org/10.18533/ijbsr.v2i4.161

Trujillo, A. (1999).Translation Engines: Techniques for Machine Translation. London: Springer-
Verlag.

Tsai, S. C. (2019). Using google translate in EFL drafts: a preliminary investigation. *Computer Assisted Language Learning, 32(5-6), 510-526. https://doi.org/10.1080/09588221.2018.1527361*

Yang, Y., & Wang, X. (2019). Modeling the intention to use machine translation for student translators: An extension of Technology Acceptance Model. *Computers & Education, 133 (1), 116-126. http://dx.doi.org/10.1016/j.compedu.2019.01.015*

Reading Prosody and Comprehension of Adult ESL Learners in Malaysia

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Abstract

This study investigated the reading prosody and comprehension of adult ESL learners in one of the Malaysian public universities. A comprehensive analysis was conducted on four prosodic features namely reading expression and volume, phrasing in reading, reading smoothness as well as reading pace. Its main objectives were (1) to examine the respondents' performance in each prosodic feature and their comprehension level; (2) to examine the relationship between reading prosody and comprehension. 210 respondents from several Diploma programs were selected for this study. Majority of the respondents' reading prosody was at the average level. No significant difference in reading prosody was identified between males and females, however, a significant difference was ascertained between Semester 1 and Semester 3 respondents. Among the four prosodic features, only reading expression and volume indicated a significant difference in reading prosody between the genders. No significant difference in reading expression and volume as well as reading pace were discovered between Semester 1 and Semester 3 respondents. Significant differences in reading prosody were discovered in phrasing in reading and reading smoothness of Semester 1 and Semester 3 respondents. 139 respondents had poor reading comprehension. The findings revealed

significant differences between genders and academic semesters in terms of comprehension level. A significant correlation was discerned between reading prosody and comprehension.

Keywords: *Adult ESL Learners, Comprehension, Prosodic Features, Reading Prosody*

1. Introduction

Reading without doubt is an exhausting language skill. Reading demands readers to rely heavily on their language skills, cognitive resources and world knowledge (Carlson, Dickey, Frazier & Clifton, 2009). Readers are required to perform multiple reading activities like predicting, skimming and scanning (Wallace, 2007, Roomy & Alhawsawi, 2019), distinguishing vocabulary and connecting meaning to words (Schunk, 2014; Kusdemir & Bulut, 2018), assessing texts or symbols (Habibian, Roslan, Idris & Othman, 2015), inferencing meaning of unfamiliar words (Buslon & Alieton, 2019), decoding words and reading sight words (Mason & Hagaman, 2012) as well as applying of background experiences or knowledge (Gatcho & Hajan, 2019a). Due to its complexity, some learners particularly ESL learners often face some setbacks in becoming proficient readers. Poor reading skills may affect learners' academic achievement and also trigger demotivation and frustration (Bahia & Yaseer, 2020). Struggling readers may also face reading anxiety that may negatively influence learners' reading comprehension (Rahmawati 2020; Shela, 2020). Learners' reading comprehension may also be influenced by reading fluency. Reading fluency is also regarded as a link to comprehension in which accuracy, speed and expression aid readers to process and decipher information from a text. Reading fluency integrates manifold skills both at a lexical and a text levels (Altani et al, 2019). All these skills entail a concurrent, insightful coordination of different cognitive, linguistic and affective competencies (Rasinski, 2004).

Accuracy and speed have been extensively studied however reading prosody still requires more experiential studies (Kim, Quinn & Petscher, 2020). One obvious reasons is due to the fact that children's prosodic reading has commonly become the focal point in many studies as compared to adult learners (Altani, Protopapas, Katoposdi, & Georgiou, 2020). Evidently, in Malaysian context, children and adolescents in both primary and lower secondary schools were the main respondents in several studies (Azlinda, Nur Hazirah & Normani, 2020; Gan, 2015 and Khor, Law & Lee, 2014). On this note, it is crucial to conduct an investigation on adult learners' prosodic reading performance especially at the tertiary level since their prosodic reading can be a marker of their comprehension and reading skills (Rasinski, 2004). The prosodic reading

enforces readers to apply their syntactic and semantic knowledge in deciphering and forming meanings from a text (Rasinski, 2004).

Besides that, the fact that reading prosody receives less attention as compared to other reading skills like skimming, scanning and inferencing at local tertiary level has also initiated this present study. This present study has alarmingly discovered that none of the English proficiency course programs in a public university in the northern Malaysia has embedded reading fluency particularly reading prosody. This scenario clearly indicates that reading fluency especially reading prosody is not acknowledged as an essential aspect in reading comprehension. Kuhn and Stahl (2003) highlight that many language instructors particularly those teaching adult readers are oblivious about the significance of enriching reading fluency specifically prosodic reading. Since learners' reading prosody is not properly coached, most often their readings are monotonous and fail to pass on the author's meaning (Kruidenier, 2002). In other words, lack of expression in reading may affect learners' comprehension of the text due to their limited ability to use punctuations to ascertain speed, stops, pitch and articulation (Kruidenier, 2002).

This present study was also initiated because of the poor reading comprehension performance among Malaysian university students. The 2018 and 2019 MUET (Malaysian University English Test) 800/3 Reading Test results clearly revealed that out of the six test score bands, majority of the students were at Band 1, 2 and 3. Based on the MUET test scores, Band 1 indicates poor understanding of the text, Band 2 refers to limited understanding of the text and Band 3 denotes the ability of understanding the text but with some misinterpretation. About 63.18% (March 2018 MUET), 81.27% (July 2018 MUET) and 75.61% (Nov 2018 MUET) of the students were at Band 1, 2 and 3. Although the reading achievement for 2019 MUET 800/3 Reading Test had slightly improved, majority of the students were still at Band 1, 2 and 3. About 67.83% (March 2019 MUET), 69.96% (July 2019 MUET) and 67.03% (Nov 2019 MUET) of the students were at these bands.

This present study was centered on two main objectives namely (1) to examine adult ESL learners' performance in four prosodic features (reading expression and volume, phrasing in reading, reading smoothness as well as reading pace) and their comprehension level based on gender and academic semester; (2) to examine the relationship between reading prosody and reading comprehension. Based on the stated research objectives, several research questions were formulated:

1. What are the levels of four prosodic features (reading expression and volume, phrasing in reading, reading smoothness as well as reading pace) and comprehension of adult ESL learners based on their gender and academic semester?
2. Is there any relationship between respondents' reading prosody and their comprehension?

2. Literature Review

Reading prosody reflects prosodic interpretation of the written text when reading aloud (Kim, Quinn & Petscher, 2020). Expressive reading incorporates aspects like phrasing, stress, timing and intonation (Kim, Quinn & Petscher, 2020; Rasinski, Rikli & Johnston, 2009; Rasinski & Padak, 2001). Proper use of these aspects along with the assistance from the cues in the text demonstrate dynamic decoding, prosodic reading and comprehension (Rasinski, 2004, Schreiber, 1980). Hamilton and Shinn (2003) explain that prosodic reading involves suitably breaking apart words into consequential components in agreement with the sentence structure used in the text. Stress, intonation, pause impositions, phrases (duration, appropriateness, last phrase expansion) are discrete indicators in reading prosody (Dowhower, 1991) and Kuhn and Stahl (2003) affirm that these indicators act as a bond between composed and verbal language. Hiebert (2002) explains that the exchange of sentence structure knowledge from discourse to writing when reading demonstrate good reading fluency (the text is read in a precise and prosodic manner at a suitable rate).

The influence of reading prosody on readers' comprehension is reflected when readers put into practice their prosodic understanding when reading a text. By doing so, their reading becomes more expressive and this signals the readers' vigorous act of elucidating meaning from the text (Rasinski, 2004). Paige et al. (2014) verify that prosodic reading has significantly assisted teenage readers' understandings text materials. Similarly, the study by Khor, Law and Lee (2014) on 67 ESL young learners have also reaffirmed the role of prosody in text comprehension. Dane et al. (2005) have further clarified prosodic features are beneficial for comprehension both during silent reading and oral reading. In addition, Valencia et al. (2010) have reiterated that differences in reading comprehension are due to prosodic reading.

The link between reading prosody and comprehension is best explained by two theories that are anticipated by Schwanenflugel et al. (2004) namely the "reading prosody as partial mediator" model and the "reading comprehension as predictor of reading prosody" model. The first model strongly emphasizes that competent, rapid and precise decoding skills would allow

prosodic aspects to assist readers' comprehension. The next model highlights that learners with skilled decoding skills and comprehension are more prone to use prosodic components in their reading activity.

The prosodic theories (Schwanenflugel et al., 2004) as well as the findings reported by previous studies on the role of reading prosody in comprehension processes have driven this present study to investigate the levels of prosodic aspects and to verify the correlation between reading prosody and comprehension among Malaysian adult learners. By doing so, better insights of Malaysian adult learners' reading prosody and comprehension would be gained. These insights would be fruitful to create students' awareness of their own reading prosody performance and to aid language instructors in designing effective remedies to boost their students' reading prosody as well as reading comprehension. Tapping students' awareness and designing effectual measures would greatly aid tertiary students in comprehending academic and non-academic reading materials.

Rating scales and spectrographic analysis are commonly used in assessing prosodic features. Kim, Quinn & Petscher (2020) explain that a standardized and reputable yardstick on expressiveness is utilized in evaluating fluent reading. Sabatini, Wang and O'Reilly (2019) assert that the National Assessment of Education Progress (NAEP) oral reading fluency scale is steadfast and relevant to learners' reading competences. Benjamin et al. (2013) affirms the reliability of the comprehensive oral reading fluency scale in measuring the reading accuracy, rate and prosody. The multidimensional fluency scale has been verified to be a consistent tool in evaluating prosodic features of languages like Spanish, Turkish, English and Dutch.

In spectrographic analysis, learners' reading prosody is examined based on aspects like intensity, pauses and pitch. Decibel is used to analyze intensity; milliseconds are utilized to quantify pauses while pitch is determined by hertz. A study revealed that children tend to raise their pitches when reading interjections, direct excerpts and contrastive words (Schwanenflugel, Westmoreland, & Benjamin, 2015). Among second graders, briefer pauses and less ungrammatical pauses were common among the good and well ahead readers (Valle, Binder, Walsh, Nemier, & Bangs, 2013). Based on Benjamin and Schwanenflugel (2010), prosodic facets are interlocked with reading comprehension. Reading prosody has evidently influenced readers' abilities (Schwanenflugel et al., 2004) and young readers with insufficient mastery of prosodic aspects were deficient comprehenders (Álvarez-Cañizo, Suárez-Coalla, and Cuetos, 2015).

Kim, Quinn & Petscher, (2020) have used both the spectrographic analysis and the rating scale in their analysis of the dimensionality of reading prosody indicators like intonation,

pitch, pauses, phrasing, smoothness and pace. Their findings revealed that prosodic features had some impact on young readers' word reading.

The extensive literature review on reading prosody analysis has inspired this present study to adopt and use the oral reading fluency procedure as well as the multidimensional fluency scale in examining Malaysian learners' reading prosody and comprehension. By trying out these two instruments, this present study would be able to know the suitability of such instruments in the local settings. The results of this present study would later reveal as to whether such instruments can be replicated in ESL classrooms. This is crucial since many studies on reading fluency (accuracy, rate and prosody) are mostly done on English native learners (Khor, Law & Lee, 2014).

3. Methodology

3.1. Respondents

210 Diploma students aged 18-20 years old from Semester 1 and Semester 3 were chosen as the respondents of this study. All of the respondents were Malays and their first language was Malay language while English Language was learnt as a second language. These respondents were selected from one of the Malaysian public universities in the Northern region of Malaysia. Semester 1 and semester 3 students were chosen in order to investigate probable variances in terms of their reading prosody and comprehension. Semester 1 students were selected based on the ground that they were new to the English course at the university while Semester 3 were chosen because of their twelve-month exposure to the tertiary English course.

The respondents were chosen based on a disproportionate random sampling in which the number of female students was larger than the number of male students and the number of Semester 1 and 3 students was larger compared to other academic semesters (Semester 4, 5 and 6). Equal number of students was chosen from two academic programs – 105 students from Diploma of Business Studies and 105 students from Diploma in Banking. Table 1 illustrates the distribution of the respondents of this study.

Table 1: Distribution of the Respondents

Gender	Semester 1	Semester 3
Male	38	37
Female	67	68
Total	105	105

3.2. Research Instruments

3.2.1 Measurement for Oral Reading Fluency

This tool was used to examine respondents' reading prosody in terms of their four prosodic features namely reading expression and volume, phrasing in reading, reading smoothness as well as reading pace. According to Rasinski, (2004), ORF provides a fast and legitimate depiction of students' performance and it permits genuinely prompt distinguishing proof of students who probably don't perform satisfactorily and who may require extra, more serious, or more focused guidance. In this study, this assessment required each student to read two different texts that had the same length (1,100 words). Each reading was timed and tape-recorded.

3.2.2. Reading Texts

Two different reading texts were used namely Reading Passage 1 ("Key to the Puzzle – Sea-Level Rise") and Reading Passage 2 ("Big, Bad and Important – Saving Crocodile Species"). These texts shared similar length and were authentic materials chosen from local newspapers. Text organization and text coherence of the selected texts were given serious attention in order to ease respondents' reading and comprehension. In order to ascertain the suitability of the selected reading texts for university/college learners, these texts were analyzed using the readability analysis. Three readability formulas were used to verify the ease of English texts for ESL learners). The rationale of using different types of readability formulas was to ensure the appropriateness of the texts for learners at specific grades or levels. The readability analyses revealed that these texts were suitable for college level. The Dale-Chall readability index for reading passage 1 was 9.56 while the Dale-Chall readability index for reading passage 2 was 9.03. The Flesch readability index for reading passage 1 was 41.20 while 42.17 was the readability index for reading passage 2. The EFLAW index for reading passage

1 was 22.8 (quite easy to understand) while the EFLAW index for reading passage 2 was 21.9 (quite easy to understand).

3.2.3. The Multidimensional Fluency Scale

This instrument comprised of four measurements in particular the pace, expression and volume, effortlessness and diction. Each measurement had four distinct depictions and a respondent's reading was assessed based on a score band that ranged from Band 1 to Band 4. Each band had its own marks – Band 1 (1 mark), Band 2 (2 marks), Band 3 (3 marks) and Band 4 (4 marks). A respondent's performance in each measurement was assessed and evaluated based on the depictions specified in each measurement.

Respondents' pace was assessed based on the subsequent depictions. Band 1 reflected the slow and laborious reading pace. Band 2 described the decently moderate slow reading pace. Band 3 alluded to lopsided combination of fast and slow reading and band 4 indicated constantly conversational reading pace

Respondents' expression and volume were assessed based on the followings. Band 1 indicated that the reader read with little expression/eagerness in his voice. He basically reads words to get them out, reads in a tranquil voice and minimal attempts were made to make the content seemed like natural language. Band 2 alluded to some expression made by the reader. His reading sounded like natural language in certain areas of the content. His emphasis was to say words and read in a tranquil voice. Band 3 implied that the reader's reading sounded like natural language. Although sometimes his reading was expressionless, his voice volume was basically suitable. Band 4 described reader's good expression, enthusiasm and natural reading.

Respondents' effortlessness was scored as the followings. Band 1 described the recurrent amplified stops, faltering, wrong beginnings, reiterations and/or different endeavors. Band 2 indicated several "harsh spots" in the content that depicted lengthy breaks and regular reluctances. Band 3 demonstrated intermittent halts in easiness because of problems with specific words and/or constructs. Band 4 depicted mostly effortless reading with minimal stops, however problems in words as well as constructs were settled rapidly through self-correction.

Respondents' diction was assessed based on the following descriptions. Band 1 indicated monotonic reading with little diction constraints (word-by-word reading). Band 2 depicted rough reading (continuous two-and-three-word dictions. The reader utilized inappropriate emphasis and intonation that neglected the sentences and clauses endings. Band 3 demonstrated the combination of choppiness; mid-sentence stops and run-ons. The reader had sensible stress and intonation. Band 4 referred to adequate expressive reading that has least diction difficulties in clauses and sentences.

3.2.4. Reading Comprehension Assessment

Two sets of multiple-choice reading comprehension assessment were used in this study. Each set was specially constructed for each reading text. Set A was designed for Reading Passage 1 ("Key to the Puzzle – Sea-Level Rise") and Set B was designed for Reading Passage 2 ("Big, Bad and Important – Saving Crocodile Species"). Each set of reading comprehension assessment consisted of 20 items (3 possible responses for each of the items; one correct response and two distracters). Bloom's Taxonomy of Cognitive Domain (Bloom, 1956) and several suggestions for formulating good multiple-choice questions (Hoover, 1980; Furhrman, 1996; Conkin & Serra, 1997; Cranton, 2000; Fenwick & Parsons, 2000; Davis, 2001) were closely referred to.

3.3. Validity and Reliability of the Research Instruments

A panel of experts that consisted of two experienced senior lecturers was appointed to monitor the oral reading fluency protocol. Aspects like the suitability of the reading texts, the test duration and the protocol procedures were closely monitored by the panel. Based on the feedback gathered from the pilot test, some improvements like the expansion of the time term for the reading tests and the paraphrase of several test items were made before the actual study.

An inter-rater agreement (the researcher and two experienced senior lecturers) was implemented to ascertain the reliability of the multidimensional fluency scale. The Fleiss' kappa coefficient for the inter-rater reliability was 0.65 (this implied a significant agreement among the raters). Both sets of the reading comprehension tests were analyzed using Kuder-Richardson reliability coefficient (KR-20). The KR-20 reliability coefficient for Set A was .71 while .70 was the reliability coefficient for Set B.

3.4. Research Procedure

Oral reading (ORF) assessment was conducted in two separate sessions. Session 1 was meant for Oral Reading Fluency assessment for Reading Passage 1 ("Key to the Puzzle – Sea-Level Rise") and Session 2 was meant for Oral Reading Fluency assessment for Reading Passage 2 ("Big, Bad and Important – Saving Crocodile Species") Session 1 and Session 2 were conducted in order to have a more valid and accurate performance of each respondent (Rasinski, 2003).

In Session 1 and Session 2, the ORF evaluation was done during respondents' regular class time. Ten minutes were allocated for each reading session and all the readings were taped-

recorded. After each oral reading fluency assessment, participants were to sit for a 30-minutes reading comprehension assessment.

Each recording will be thoroughly graded based on the Multidimensional Fluency Scale. Since two different passages were used, the median or middle score was used for analysis (Rasinski, 2003). Both the reading comprehension assessments were marked according to answer schemes and marks were later tabulated.

3.5. Test Scoring for Reading Prosody

Respondents' scores were interpreted according to four levels namely Poor (scores that ranged from 4 to 6 marks), Average (scores that ranged from 8 to 11 marks), Good (scores that ranged from 12 to 15 marks) and Excellent (16 marks). The test scoring procedures were done for both reading texts (Reading Passage 1 and 2). Since two reading passages were used, the total median or middle scores of reading prosody were carefully analyzed (Rasinski, 2004).

3.6. Test Scoring for Reading Comprehension Assessment

The multiple-choice reading comprehension test required learners to select the best option for each comprehension question. The excellent score ranged from 17 to 20 while a score that ranged from 13 to 16 was considered as good. A score that ranged from 9 to 12 was considered as average while a poor score ranged from 5 to 8. Any score that was below 4 marks was considered as a very poor score.

4. Findings

Respondents' reading prosody were analyzed and categorized according to three respective levels that were Poor, Average and Good. Generally, Figure 1 depicts that majority of the respondents were at the average level since 121 (57.6%) out of 210 respondents were at this level. 71 (33.8%) respondents were categorized as poor and the remaining 18 (8.6%) were labeled as good.

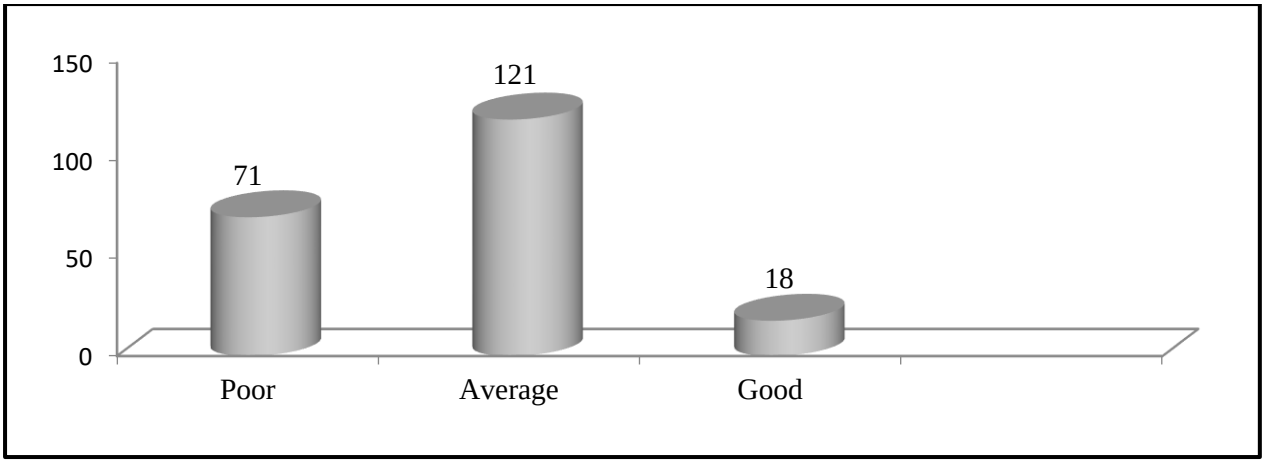

Figure 1: Levels of Respondents' Reading Prosody

Several interesting findings about the respondents' reading prosody according to gender were unfolded in the analysis (refer to Figure 2). Only 11 (5.2%) males and 7 (3.3%) females had good reading prosody. 33 (15.7%) males and 88 (42%) females performed at the average level while another 71 that comprised 23 (10.9%) males and 48 (22.9%) females had poor reading prosody.

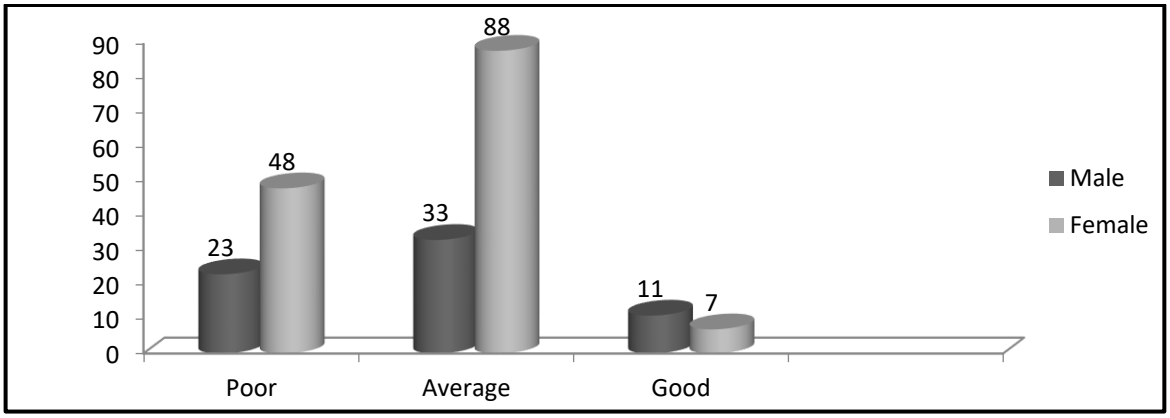

Figure 2: Levels of Respondents' Reading Prosody by Gender

An investigation on several prosodic features namely reading expression and reading volume, phrasing in reading, reading smoothness and reading pace in order to investigate possible differences that might exist between gender and also academic semester. The findings illustrated that females obtained a higher mean score ($\bar{x}$ = 1.82, SD = .69) than males ($\bar{x}$ = 1.71, SD = .55). The analysis found that there was no distinction between both groups, t (208) = 1.21, p = .07 (p >.05).

Figure 3 reveals that 49 (23.3%) Semester 1 respondents and 22 (10.5%) Semester 3 respondents had poor reading prosody while 47 (22.4%) Semester 1 and 74 (35.2%) Semester

3 respondents performed at the average. The remaining 18 (8.6%) respondents were readers with sound reading prosody.

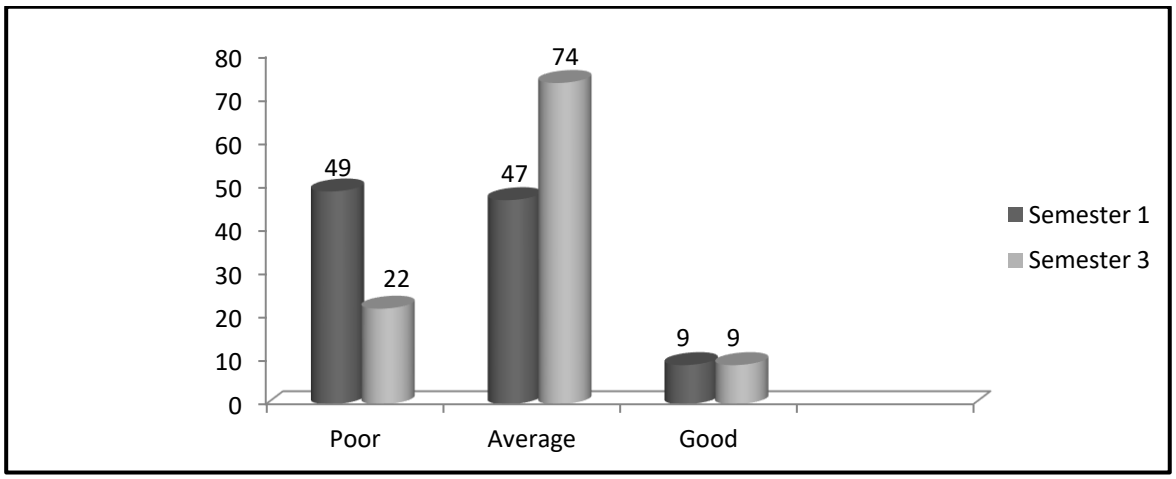

Figure 3: Levels of Respondents' Reading Prosody by Academic Semester

Semester 3 obtained a higher mean score ($\bar{x}$ = 1.87, SD = .64) than Semester 1 ($\bar{x}$ =1.61, SD = .53). A disparity was discovered between the groups, *t* (208) = -3.16, p = .002.

The respondents' reading expression and reading volume were examined according to four prominent categories. In the first category, reading was described as the act of reading with little expression or enthusiasm. The second category described reading as the act of reading with some expression while the third category described reading process that sounded like natural language with some expressionless. The last category described reading as the act of reading with good expression and with enthusiasm.

Based on Figure 4, 64.7% (136) of the respondents were in the second category since their reading demonstrated some expressions. The focus of these readers remained largely on saying the words. Another 22.9% (44) respondents read the assigned text with minimal expression in their voices. 13.8% (29) of the respondents' readings were occasional expressionless. Only 0.5% (1) respondent read with good expression and enthusiasm throughout the text.

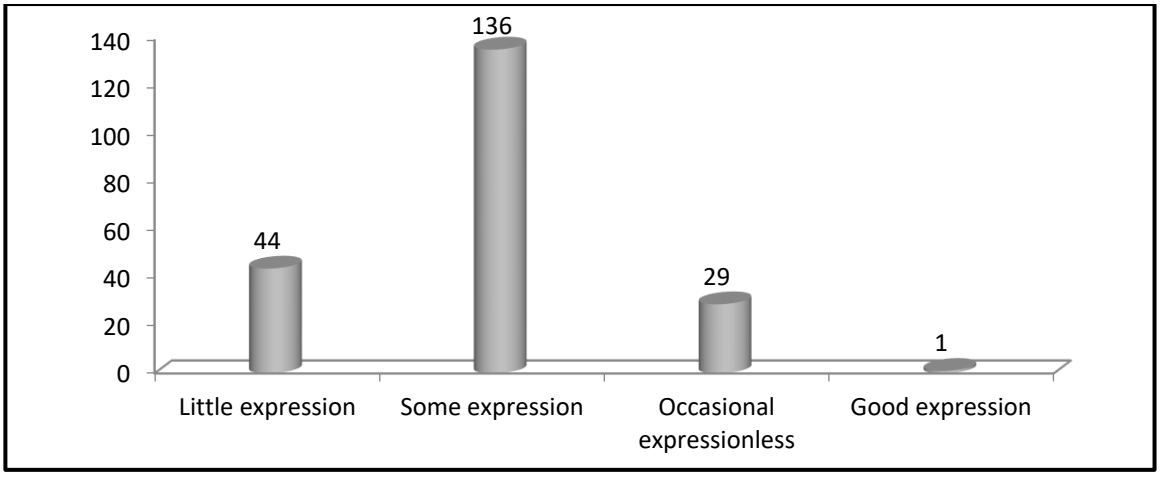

Figure 4: Levels of Respondents' Reading Expression and Reading Volume

Data analysis in Figure 5 reveals those 11 males and 33 females had little reading expression and volume whereas 48 males and 88 females were identified as having some expression while reading. Another 15 males and 14 females were able to read naturally but still read expressionless in some parts of the reading text. Only 1 respondent (male) had good reading expression.

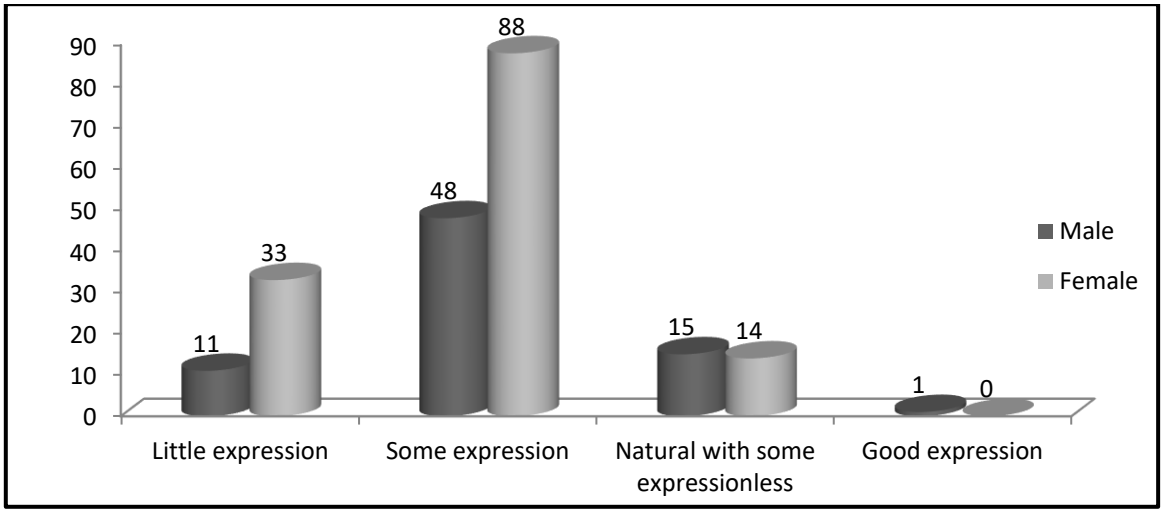

Figure 5: Levels of Respondents' Reading Expression and Reading Volume by Gender

Female respondents attained a greater mean score ($\bar{x}$ = 2.08, SD = .63) as compared to male respondents ($\bar{x}$ = 1.86, SD = .57). The analysis also illustrated that there was a discrepancy between the genders t (208) = .2.57, p = .01.

Data analysis as indicated in Figure 6 describes that 28 Semester 1 and 16 Semester 3 respondents had little reading expression and volume whereas 61 Semester 1 and 75 Semester 3 demonstrated some reading expression and volume. Another 15 Semester 1 and 14 Semester

3 read naturally with occasional expression in certain parts of the assigned reading text. Only 1 respondent (Semester 1 student) had good reading expression and volume.

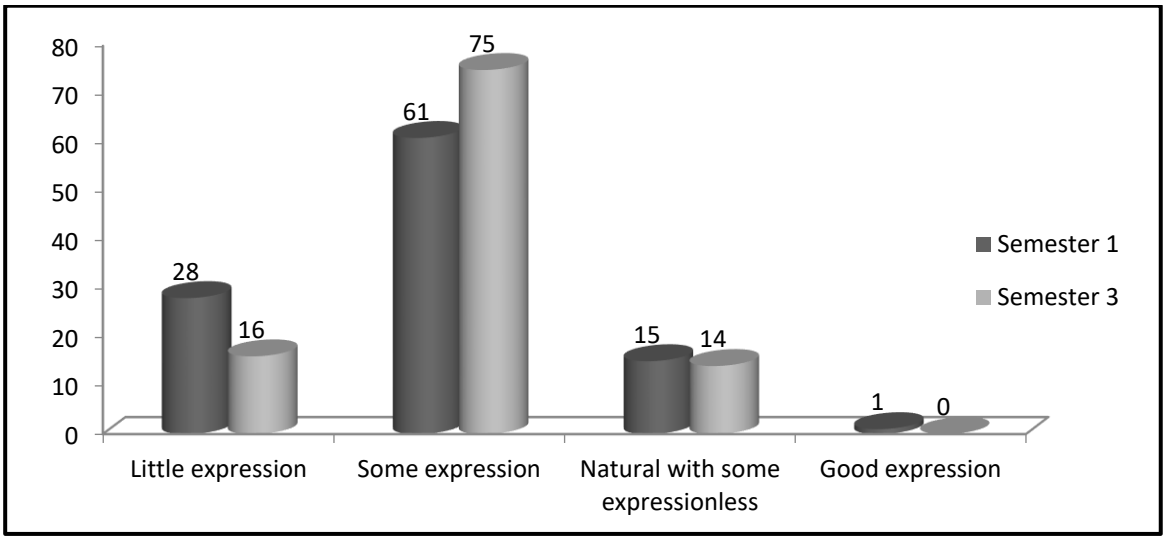

Figure 6: Levels of Respondents' Reading Expression and Reading Volume by Academic Semester

The results shows that Semester 3 demonstrated a higher mean score ($\bar{x}$ = 1.98, SD = .66) than Semester 1 ($\bar{x}$= 1.89, SD = .53). No distinction was discovered between the respondents' reading expression and reading volume, *t* (208) = -.10, p = .30 (p >.05).

Phrasing in reading was examined based on four categories namely, monotonic reading, choppy reading, mixture reading and well-phrased reading. Figure 7 illustrates that 37 (17.6%) respondents' phrasing was monotonic. 103 (49%) respondents had rough reading where inacceptable emphasis and pitch were committed and as a result these respondents failed to spot endings of clauses and sentences. Another 68 (32.4%) respondents had mixture (quick and slow speed). Only 2 (1%) respondents had well-phrased reading where most of the clause and sentence units were well-phrased. In addition, these respondents paid adequate attention to expression.

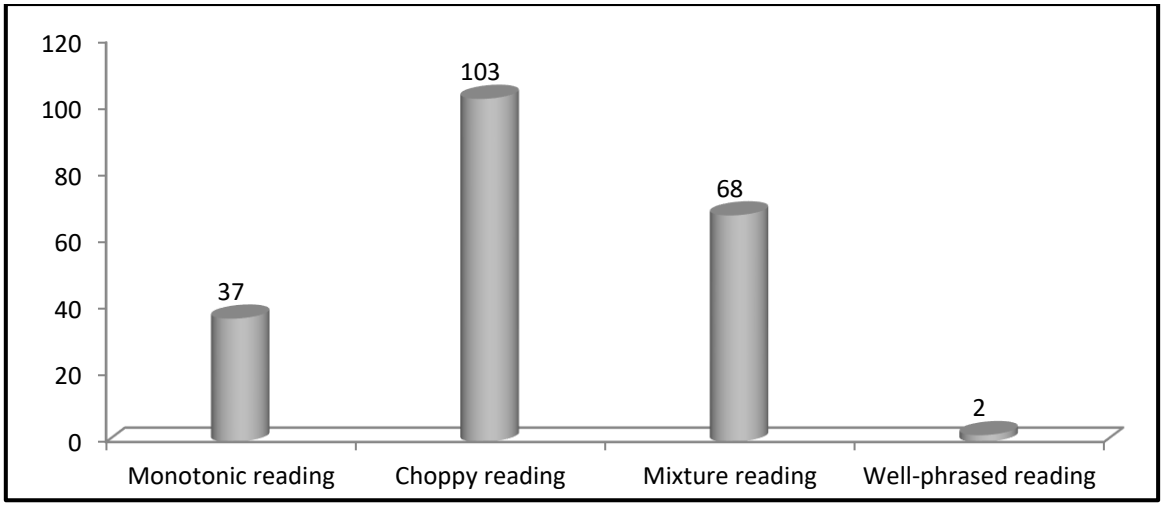

Figure 7: Levels of Respondents' Phrasing in Reading

As for the respondents' reading phrasing based on gender, Figure 8 illustrates that 13 males and 24 females had monotonic reading while another 34 males and 69 females read with choppy reading phrasing. In addition, it was found that 27 males and 41 females were reading with the mixture of fast and slow phrasing while only 2 respondents (1 male and 1 female) possessed well-phrased reading manner.

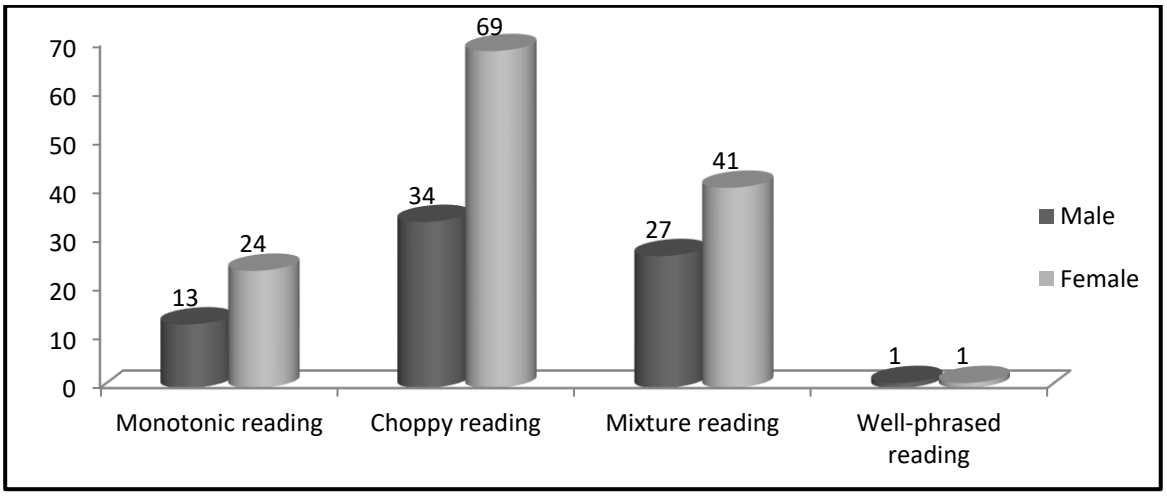

Figure 8: Levels of Respondents' Phrasing in Reading by Gender

The findings indicated that female respondents obtained a higher mean score ($\bar{x}$ = 2.21, SD = .74) than male respondents ($\bar{x}$ = 2.14, SD = .70). No disparity was found between the genders, $t(208) = .70$, $p = .48$ ($p > .05$).

As for the respondents' performance in phrasing while reading based on their academic semester, the data analysis in Figure 9 exposes that 26 (12.4%) Semester 1 and 11 (5.2%)

Semester 3 respondents had monotonic phrasing when reading. Another 52 (24.8%) Semester 1 and 51 (24.3%) Semester 3 respondents had choppy reading while another 26 (12.3%) Semester 1 and 42 (20%) Semester 3 had a mixture of fast and slow reading. Only 2 (1%) respondents - 1 Semester 1 and 1 Semester 3 respondents - demonstrated well-phrased reading.

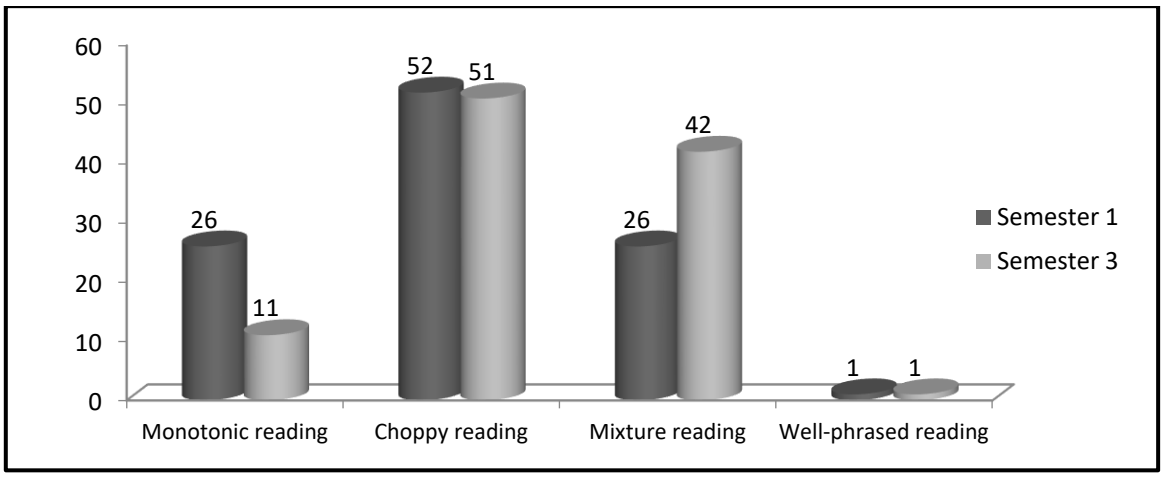

Figure 9: Levels of Respondents' Phrasing in Reading by Academic Semester

Semester 3 respondents obtained a higher mean score ($\bar{x}$ = 2.31, SD = .73) than Semester 1 respondents ($\bar{x}$ = 2.02, SD = .67) in terms of phrasing in reading. The analysis also showed a noteworthy distinction between the academic semesters, $t(208)$, = -3.05, p = .003 (p < .05).

Reading smoothness was also examined in order to have a detailed description of the respondents' reading prosody. Reading smoothness was investigated based on four categories namely poor reading smoothness, satisfactory reading smoothness, reasonably well reading smoothness and good reading smoothness. Figure 10 highlights that 37 respondents had poor reading smoothness while 93 respondents had satisfactory reading smoothness. Another 77 respondents had reasonably well while only 3 respondents were identified to have good reading smoothness.

Figure 10: Levels of Respondents' Reading Smoothness

Figure 11 on the other hand illustrates that 13 males and 24 females had poor reading smoothness. In addition, 29 males and 64 females had satisfactory reading smoothness while another 31 males and 46 females had reasonably well reading smoothness whereas the remaining 2 males and 1 female possessed good reading smoothness.

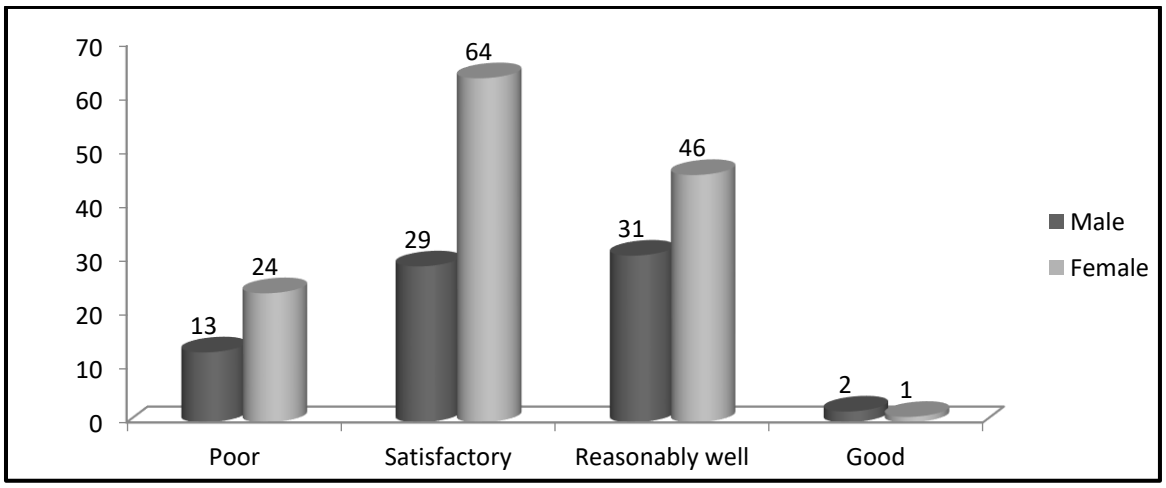

Figure 11: Levels of Respondents' Reading Smoothness by Gender

Female respondents ($\bar{x}$ = 2.29, SD = .78) had a higher mean score than male respondents ($\bar{x}$ = 2.18, SD = .72) in terms of reading smoothness. However, it was discovered that there was no dissimilarity among these genders in terms of their reading smoothness, *t* (208) = 1.08, p = .28 (p >.05).

Figure 12 discloses that 28 (13.3%) Semester 1 and 9 (4.2%) Semester 3 respondents had poor reading smoothness. Another 45 (21.4%) Semester 1 and 48 (22.9%) Semester 3 had satisfactory reading smoothness while 31 (14.7%) Semester 1 and 46 (22%) Semester 3

respondents had reasonably well reading smoothness. It was also found that only 1 (0.5%) Semester 1 and 2 (1%) Semester 3 respondents had well-phrased reading smoothness.

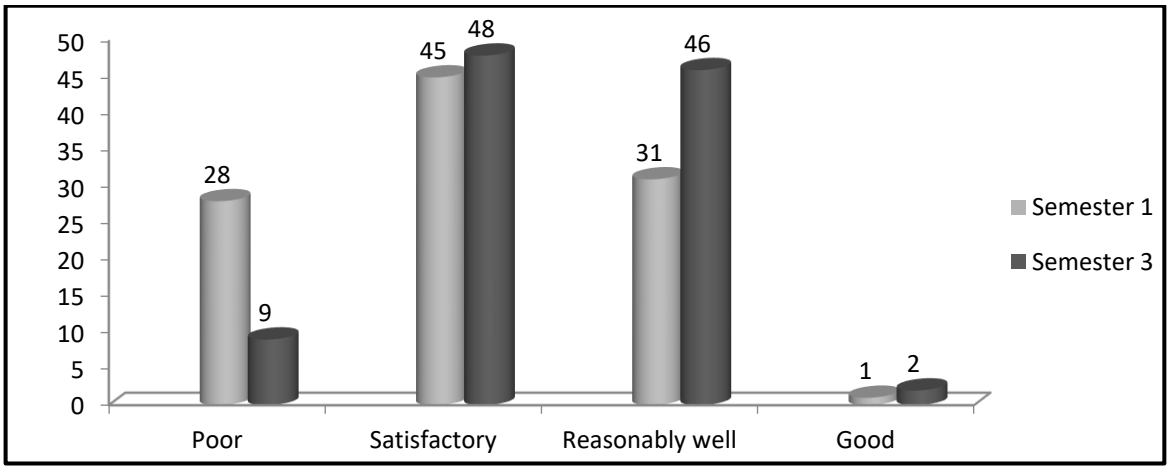

Figure 12: Levels of Respondents' Reading Smoothness by Academic Semester

In terms of reading smoothness, Semester 3 respondents demonstrated a greater mean score ($\bar{x}$ = 2.39, SD = .77) as compared to Semester 1 respondents ($\bar{x}$ = 2.05, SD = .67). The analysis indicated a positive distinction among the academic semesters, *t* (208), = -3.42, p = .001 (p < .05).

Reading pace was the final component of reading prosody that was examined in the present study. Similar with other elements of reading prosody, the respondents were evaluated based on four respective categories. The first category described reading pace as slow and laborious and the second category described reading pace as moderately slow. The third category elaborated reading pace as uneven mixture of fast and slow reading while the last category explained reading pace as consistently conversational. Figure 13 shows that 44 (21%) of the respondents had slow and laborious reading pace whereas another 88 (41.9%) respondents had moderately slow reading pace. Another 78 (37.1%) respondents had imbalanced combination of quick and slow reading and none of the respondents had consistently conversational reading pace.

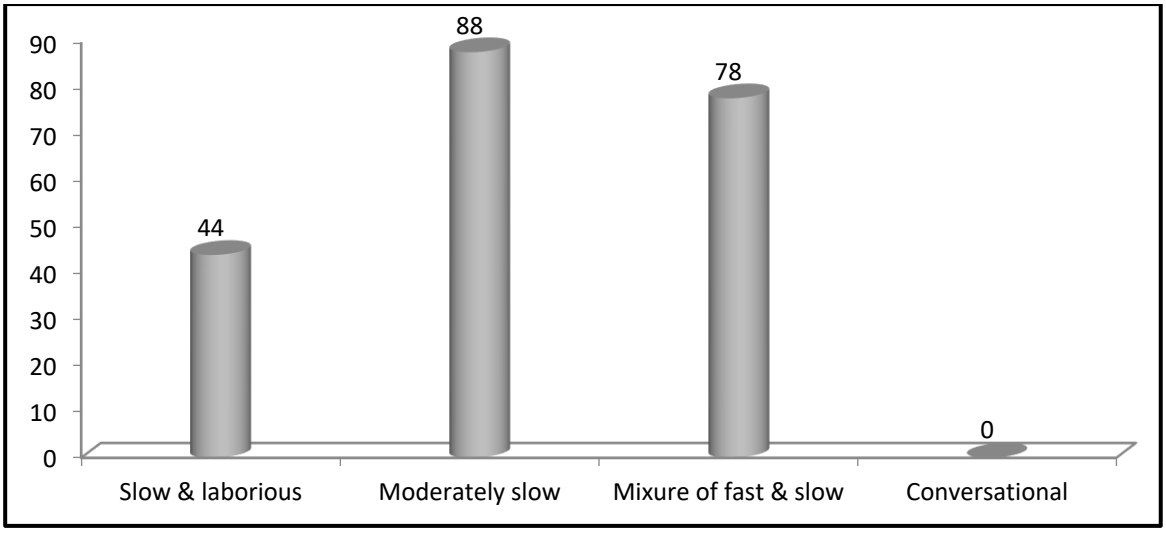

Figure 13: Levels of Respondents' Reading Pace

As for the reading pace, Figure 14 clearly showed that 16 males and 28 females had slow and laborious reading pace and another 29 males and 59 females had moderately slow reading pace. The remaining 30 males and 48 females demonstrated a blend of quick and slow speed. No respondents had good reading pace.

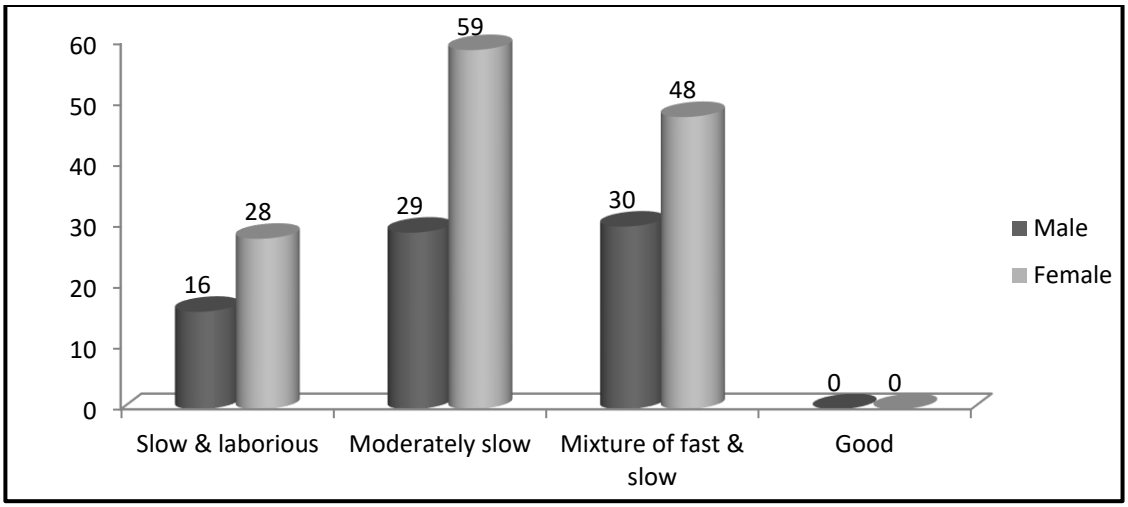

Figure 14: Levels of Respondents' Reading Pace by Gender

Females ($\bar{x}$ = 2.19, SD = .76) displayed a higher mean score for reading pace than males ($\bar{x}$ = 2.15, SD = .73). No critical distinction was found between the genders, *t* (208) = .36, p = .72 (p > .05).

Figure 15 depicts that 28 (13.3%) Semester 1 and 16 (7.6%) Semester 3 respondents had slow laborious reading pace. Another 43 (20.5%) Semester 1 and 45 (21.4%) Semester 3 respondents demonstrated moderately slow reading pace whereas the remaining 34 (16.2%)

Semester 1 and 44 (21%) Semester 3 respondents read with a blend of quick and slow speed. Generally, no respondents had good reading pace.

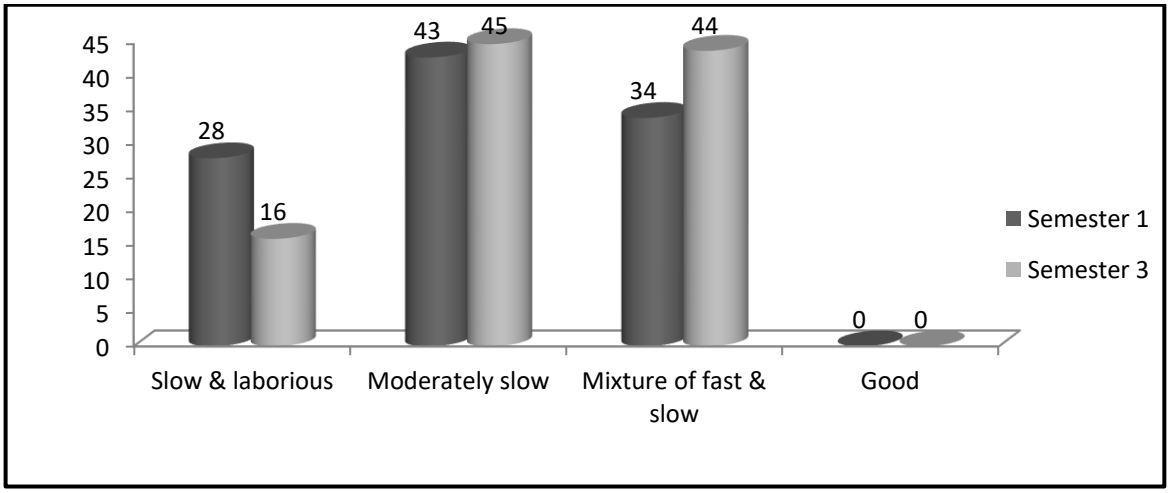

Figure 15: Levels of Respondents' Reading Pace by Academic Semester

Semester 3 respondents ($\bar{x}$ = 2.27. SD = .76) had demonstrated a higher mean score than Semester 1 respondents ($\bar{x}$ = 2.06, SD = .71). However, no significant difference was found between the groups, *t (*208) = -2.05, p = .42 (p > .05).

In order to examine the students' reading comprehension abilities, the respondents' performance was analyzed and categorized according to several levels namely Very Poor, Poor, Average and Good. The findings in Figure 16 revealed that majority of the respondents' reading comprehension was poor since out of 210 respondents, 139 (66.2%) of them were at this level. Another 58 (27.6%) respondents had average abilities while only 1 (0.5%) respondent had good reading comprehension. The remaining 12 (5.7%) respondents had very poor reading comprehension.

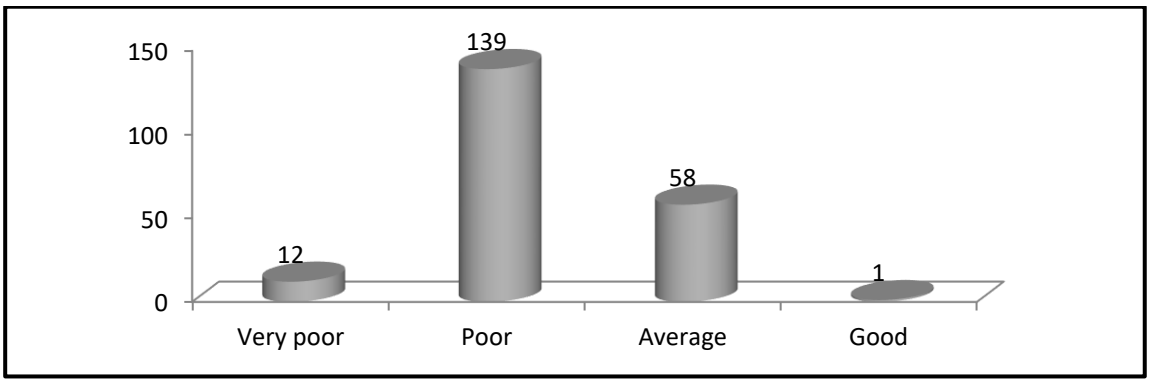

Figure 16: Levels of Respondents' Reading Comprehension Abilities

Data analysis in Figure 17 revealed that out of 210 respondents only 1 (0.5%) respondent had good reading comprehension ability and this respondent was a female. 28 (13.3%) males and 30 (14.3%) females had average comprehension abilities while 12 (5.7%) respondents (2 males and 10 females) had very poor reading comprehension. Majority of the respondents that comprised of 37 (17.6%) males and 102 (48.6%) females had poor comprehension abilities.

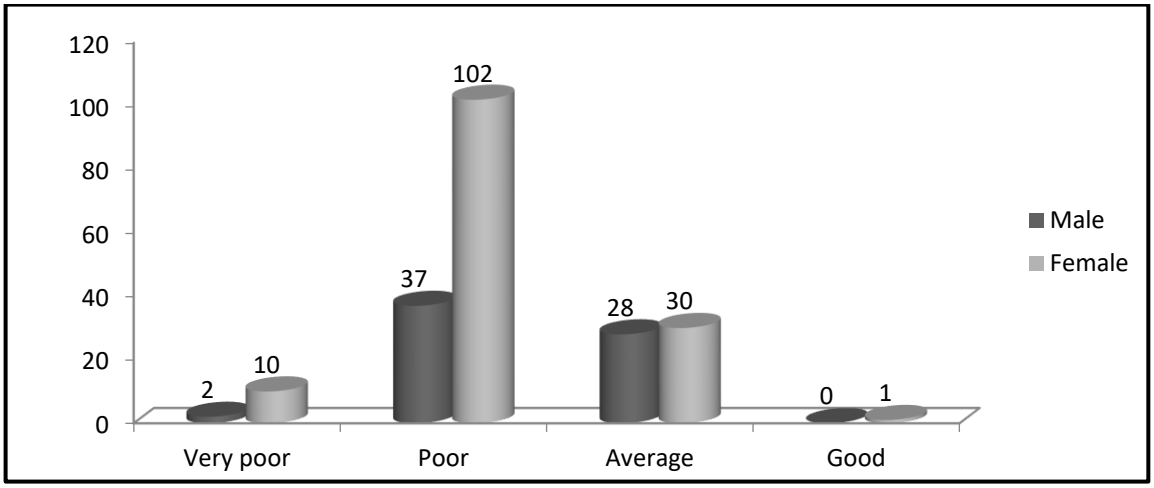

Figure 17: Levels of Respondents' Reading Comprehension Abilities by Gender

Females were found to have a higher mean score ($\bar{x}$ = 2.38, SD = .54) than males ($\bar{x}$ = 2.15, SD = .53). The analysis further illustrated that there was a significant difference between the gender, $t(208) = 2.90$, $p = .004$ ($p < .05$).

The analysis on the respondents' reading comprehension abilities according to academic semester as presented in Figure 18 revealed that out of 210 respondents, only 1 (0.5%) respondent had good reading ability and this respondent was from Semester 1. 33 (15.7%) Semester 3 and 25 (12%) Semester 1 had average abilities while 74 (35.2%) Semester 1 and 65 (30.9%) Semester 3 had poor reading comprehension abilities. 5 (2.4%) Semester 1 and 7 (3.3%) Semester 3 had very poor reading comprehension abilities.

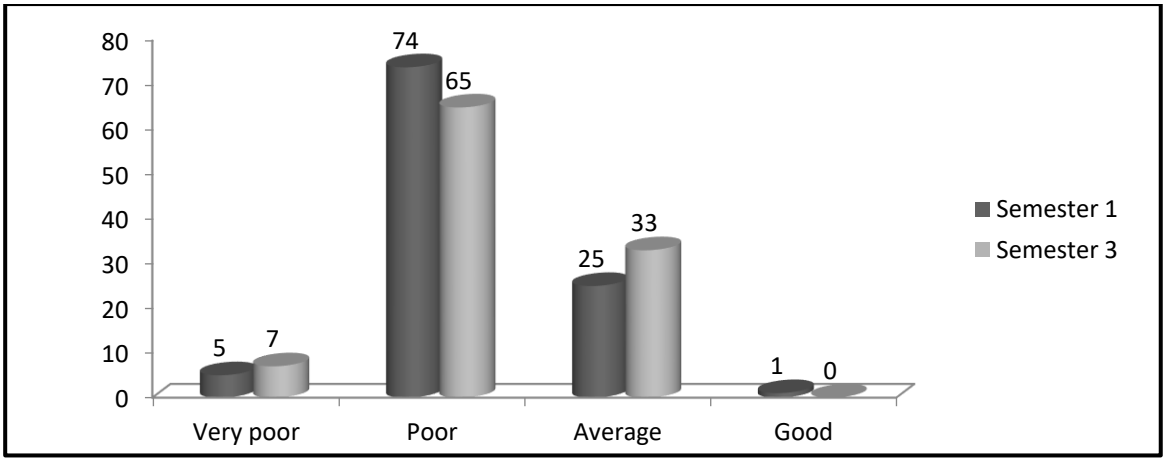

Figure 18: Levels of Respondents' Reading Comprehension Abilities by Academic Semester

Semester 3 ($\bar{x}$ = 2.24, SD = .56) obtained a higher mean score than Semester 1 ($\bar{x}$ = 2.20, SD = .53). However, there was no significant difference between Semester 1 and Semester 3 respondents, *t* (208) = -.50, p = .62 (p > .05).

The correlational analysis conducted revealed that there was a significant relationship between reading prosody and reading comprehension *r* (208) = .71, p < .05.

Table 2: Correlation Score between Reading Prosody and Reading Comprehension

	Reading Fluency	n	Reading Comprehension
Pearson correlation	Prosody	210	.71*

* Correlation is significant at the 0.05 level (1-tailed)

5. Discussion

The findings revealed that out of 210 respondents, 121 respondents' reading prosody were at average level while 71 respondents were categorized as having poor reading prosody. Only 18 respondents had good reading prosody. Comparatively, female respondents performed better than males in terms of their reading prosody. In addition, Semester 3 respondents performed better than Semester 1 respondents.

Limited knowledge about stress, pitch and intonation was one of the possible reasons that had influenced respondents' reading prosody. The average performance of the majority of the respondents obviously indicated that many of these respondents had moderate ability to read expressively words, sentences and meanings. As a result, many of them had encountered

some difficulties in understanding appropriate use of intonation, emphasis, rate, stress and phrasing. They encountered some struggles in deciding where to put accentuations and in what manner to attend to punctuations. Their reading comprehension was affected because of the glitches in chunking groups of words into meaningful units and in effectively parsing a reading text (Rasinski, 2003). This finding had evidently supported the fact that effortless reading was governed by tone, articulation as well as stress and sound understanding of word, sentence and text construction are steadfast signs for eloquent reading (Rasinski, Blanchowicz & Lems, 2006). Increases and decreases in pitch patterns and variances in enunciation rates, pitch and length can indicate speech units and sentence peripheries (Rasinski, Blanchowicz & Lems, 2006). In addition, prosodic elements like pauses permit readers to focus on text comprehension, remedy mistakes and make decisions.

Another possible cause for the respondents' average performance was the differences between English Language (respondents' second language) and Malay Language (respondents' native language) in terms of their prosodic systems. Firstly, English Language emphasizes the importance and functionality of stress. As such, language users must be well-versed with the differences between the stressed and unstressed syllables. The initial type commonly happens at standard interims and they are ordinarily lengthier and rowdier. In contrast, the later type is typically articulated in a brief and discreet manner that they do not interrupt the tempo or pace. In addition, these syllables are commonly uttered in a greater tone and are placed in positions that can match appropriately the stressed syllables. Since stress patterns and intonations may denote various meanings, English Language users hinge on these aspects to ascertain and imply denotations of words and remarks. Malay Language, on the contrary, highlights the significance of the timing of syllables. Unlike English Language, stress does not have any purpose (Juliah, 1993) because it is not used to differentiate words or to establish importance. Hence, users regularly alter word order when they want to accentuate. In addition, stress is foreseeable since it occurs at a similar position in a sentence.

The second major difference between English language and Malay Language lies in the functions of intonations. English Language intensely values intonations since they denote viewpoints, enunciations, grammar and communication. In Malay Language, some of the main functions of intonations are to convey feelings and opinions but in terms of their forms, they could be dissimilar with the forms that exist in English Language. Due to this dissimilarity, to indicate lists or verbs order, Malay Language users are inclined not to make use of the rising tone (Checketts, 1993). Furthermore, a rising tone occurs constantly at the conclusion of an

explanation or a list. In expressing attitudes (reliant on what is emphasized), Malay Language users often use the stress at nearly any place in their speech (Thomas, 1996).

Differences between the respondents' L1 and L2 prosodic systems would encourage native language influence (L1 interference) in the production of L2 reading. According to Samuels and Farstrup (2006), language learners enter their English-dominant classroom with different ideas of language structure (syntax), of how words are built (morphology), of sound systems (tones and phonology), of the variety of words from which to choose (lexicon), of the multiple meanings that a word can have (polysemy), and of written symbols (orthography). At the point when a reader's native language does not match his or her second/ foreign language, he or she will utilize the best approach that he or she has, to complement his or her native spoken language to written English. Thomas (1996) explains that ESL learners often face problems with tone and stress in English Language. Due to this, it is much often for these learners to resort to their native language in their L2 reading.

Another factor that seemed to affect the respondents' reading prosody was the syntax and semantic knowledge. Reading expression and volume would change depending on the functions of sentences used in a text. For instance, sentences that indicated anger should be read with high volume (to project anger tone) while sentences that indicated sadness required low volume (to express sadness). This finding reaffirms that reading fluency particularly prosodic reading evolves on the basis of the structural schema of the sentence (Koriat & Greenberg, 1994). The finding also agrees with Fodor (2002) who states prosodic features are used in syntax amid reading activity. Readers would dole out syntactic parts to the words within the sentence in order to read expressively (Chafe, 1988). Based on Epstein (1961), syntax may influence reading in two conditions: (1) in assigning tasks to words; (2) in systematizing information to memory.

Phonology helps readers to assign relevant prosodic elements in sentence structures (Koriat, Greenberg & Kreiner, 2002) and function words act as clues that assist readers to develop structural schema. In other words, reading prosody is not merely an artifact of oral reading, but rather it helps text processing. Reading volume and reading expression would help readers to concentrate on main ideas since these prosodic features would allow readers to associate their own feelings with the text.

The results of the study also revealed that there was a positive relationship between reading prosody and reading comprehension. This finding supports Kitzen's (2001) study that demonstrates a high correlation between university students' reading competency and prosodic understanding. The finding is also consistent with Whalley and Hansen (2009) who state that

prosodic sensitivity is much needed in word recognition and reading comprehension. The positive relationship between reading prosody and comprehension revealed in this study is likewise aligned with Khor, Law & Lee, (2014) who have highlighted a strong correlation between prosodic reading and comprehension among Malaysian learners.

6. Conclusion

Limited training and practice of prosodic features requires language instructors' serious attention and consideration. Schreiber (1991) claims that instruction in fluency especially instruction involving prosodic features is often ignored. Language instructors often assume their learners are able to identify clues in sentences and to utilize components of prosody when reading aloud. As such, reading prosody is often neglected in reading instruction. Besides that, the dominance of basal reading approaches in recent reading instruction has also resulted the exclusion of reading prosody.

Prosodic components should be given serious attention in language instruction since these components are not a language spin-off instead they represent a meaningful component of a language. These components transmit various forms of communication and their plentiful systematic form delivers extra facts about sentences. According to Kimelman (1999), reading prosody could aid readers to sort out and understand information. Reading expressively involves deciphering word meaning, interpreting expressive purpose and understanding novel information.

Language instructors should consider adapting prosody in reading as an instructional tool to enhance reading activities as well as an instrument to evaluate students' comprehension and word decoding. In addition, considerable exposure and practice towards English reading materials would greatly increase students' expressive reading. Regular, adequate and compelling feedback on students' reading is also recommended. Help and direction ought to be given to students' tone forms, enunciation rates, accentuation, expression and stress. Language instructors ought to clarify ways on how words ought to be assembled in a sentence and also illustrate how meaning can be mislaid. These supports would gradually guide students in becoming more expressive in their reading.

7. Acknowledgements

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References

Altani, A., Protopapas, A., Katopodi, K., & Georgiou, G. (2020). From individual word recognition to word list and text reading fluency. *Journal of Educational Psychology*, *112*(1), 22-39. https://doi.org/10.1037/edu0000359

Álvarez-Cañizo, M., Suárez-Coalla, P., & Cuetos, F. (2015). The role of reading fluency in children's text comprehension. *Frontiers in Psychology, 6*, 1810. http://dx.doi.org/10.3389/fpsyg.2015.01810

Arcand, M.-S., Dion, E., Lemire-Theberge, L., Guay, M.-R., Barrette, A., Gagnon, V. & Fuchs, D. (2014). Segmenting texts into meaningful word groups: Beginning readers' prosody and comprehension. *Scientific Studies of Reading, 18,* 208 –223. http://dx.doi.org/10.1080/10888438 .2013.864658

Azlinda, A. G., Nur Hazirah, M., & Normani, M. Z., (2020). The effects of gender and academic achievement on reading fluency among Year 2 Malaysian school children. *International Journal of Pediatric Otorhinolaryngology*, 132.

Bahia, Z. & Yaseer, A. (2020). Investogating the Sources of Reading Anxiety among Undergraduate Saudi Female EFL Students in Translation Departments. *TESOL International Journal, 15(5),* 65-77.

Baker, D., Park, Y., Baker, S., Basaraba, D., Kame'enui, E., & Beck, C. (2012). Effects of a paired bilingual reading program and an English-only program on the reading performance of English learners in Grades 1–3. *Journal of School Psychology*, *50*(6), 737-758. https://doi.org/10.1016/j.jsp.2012.09.002

Baker, D. L., Park, Y., & Baker, S. K. (2012). The reading performance of English learners in grades 1–3: The role of initial status and growth on reading fluency in Spanish and English. *Reading and Writing, 25,* 251–281. http://dx.doi.org/10.1007/s11145-010-9261-z

Baker, S. K., Smolkowski, K., Katz, R., Fien, H., Seeley, J. R., Kame'enui, E. J., & Beck, C. T. (2008). Reading fluency as a predictor of reading proficiency in low-performing, high-poverty schools. *School Psychology Review, 37*, 18 –37.

Benjamin, R. G., & Schwanenflugel, P. J. (2010). Text complexity and oral reading prosody in young readers. *Reading Research Quarterly*, 45, 388 – 404. http://dx.doi.org/10.1598/RRQ.45.4.2

Benjamin, R. G., Schwanenflugel, P. J., Meisinger, E. B., Groff, C., Kuhn, M. R., & Steiner, L. (2013). A spectrographically grounded scale for evaluating reading expressiveness. *Reading Research Quarterly*, *48*, 105–133. http://dx.doi.org/10.1002/rrq.43

Binder, K. S., Tighe, E., Jiang, Y., Kaftanski, K., Qi, C., & Ardoin, S. P. (2013). Reading expressively and understanding thoroughly: An examination of prosody in adults with low literacy skills. *Reading and Writing, 26,* 665– 680. http://dx.doi.org/10.1007/s11145-012-9382-7

Boersma, P., & Weenink, D. (2015). *Praat, doing phonetics by computer* (Version 5.4.20) [Computer program]. Retrieved from http://www.fon.hum.uva.nl/praat/

Calet, N., Gutierrez-Palma, N., & Defior, S. (2015). A cross-sectional study of fluency and reading comprehension in Spanish primary school children. *Journal of Research in Reading, 38,* 272–285. http://dx.doi .org/10.1111/1467-9817.12019

Calet, N., Gutierrez-Palma, N., Simpson, I. C., Gonzalez-Trujillo, M. C., & Defior, S. (2015). Suprasegmental phonology development and reading acquisition: A longitudinal study. *Scientific Studies of Reading, 19,* 51–71. http://dx.doi.org/10.1080/10888438.2014.97634

Carroll, P.J. & Slowiaczek, M. L. (1987). Modes and modules: Multiple pathways to the language processor. In J.L. Garfield (Ed.), *Modularity in knowledge representation and natural language understanding* (221-247). Cambridge, MA: MIT Press.

Carlson, K., Dickey, M. W., Frazier, L., & Clifton, C. (2009). Information structure expectations in sentence comprehension. *Quarterly Journal of Experimental Psychology*, 62(1), 114-139.

Chafe, W. (1988). Punctuation and the Prosody of Written Language. *Written Communication*, *5*(4), 395-426. https://doi.org/10.1177/0741088388005004001

Caldwell, J.S. (2002). *Reading assessment: A primer for teachers and tutors*. New York: Guilford Press

Checketts, S. (1993). *Thoughts on pronunciation.* New Straits Times, 27 October. 30-31.

Daane, M. C., Campbell, J. R., Grigg, W. S., Goodman, M. J., & Oranje, A. (2005). *The Nation's Report Card: Fourth-grade students reading aloud: NAEP 2002 special study of oral reading*. Washington, DC: National Center for Education Statistics.

Deno, S.L. & Marston, D. (2006). Curriculum-based measurement of oral reading: An indicator of growth in fluency. In S. J. Samuels & A. E. Farstrup (Eds.), *What research has to say about fluency instruction* (179-203). Newark, DE: International Reading Association.

Dowhower, S.L. (1991). Speaking of prosody: Fluency's unattended bedfellow. *Theory into Practice, 30,* 165-175.

Epstein, W. (1961). The influence of syntactical structure on learning. *American Journal of Psychology*, *74*, 80-85.

Fodor, J.D. (2002). *Psycholinguistics cannot escape prosody*. Paper presented at the Speech prosody, Aix-en-Provence, France.

Fuchs, L.S., Fuchs, D., Hosp, M.D. & Jenkins, J. (2001). Oral reading fluency as an indicator of reading competence: A theoretical, empirical and historical analysis. *Scientific Studies of Reading*, *5*, 239-259.

Habibian, M., Roslan, S., Idris, K., & Othman, J. (2015). The Role of Psychological Factors in the Process of Reading. *Journal of Education and Practice*, *6*(29), 114123.

Hamilton, C. & Shinn, M. R. (2003). Characteristics of word callers: An investigation of the accuracy of teachers' judgments of reading comprehension and oral reading skills. *School Psychology Review*, 32, 228-240

Hiebert, E.H. (2002). Becoming fluent: What difference do texts make? In S.J. Samuels & A. E. Farstrup (Eds.), *What research has to say about reading fluency* (204-226). Newark, DE: International Reading Association.

Hudson, R.F., Lane, H.B., & Pullen, P.C. (2005). Reading fluency assessment and instruction: What, why, and how. *The Reading Teacher, 58(8*), 702-714.

Hudson, R.F., Lane, H.B. & Pullen, P.C. (2006). *Reading fluency: What, why and how*. Massachusetts Reading First Statewide Conference. Florida Center for Reading Research. Florida State University

Hudson, R.F., Mercer, C.D. & Lane, H.B. (2006). *Exploring reading fluency: A paradigmatic overview.* Unpublished manuscript, University of Florida. Gainesville.

Hudson, R., Pullen, P., Lane, H., & Torgesen, J. (2008). The complex nature of reading fluency: A multidimensional view. *Reading & Writing Quarterly*, 25(1), 4-32. https://doi.org/10.1080/10573560802491208

Gan, H. H. (2015). *Oral reading fluency: learning English as a second language in Malaysia.* [Final Year Project Report] (Unpublished). UniMAS.

Gatcho, A.R. & Hajan, B. (2019a). Augmenting ESL Learners' Reading Skills through Explicit Instruction of Metacognitive Strategies. *JEELS (Journal of English Education and Linguistics Studies), 6(1),* 1-23.

González-Trujillo, M. C., Calet, N., Defior, S., & Gutiérrez-Palma, N. (2014). Escala de fluidez lectora en español: Midiendo los componentes de la fluidez [Scale of reading fluency in Spanish: Measuring the components of fluency]. *Estudios de Psicología, 35,* 104 – 136. http://dx.doi.org/10.1080/02109395.2014.893651

Groen, M. A., Veenendaal, N. J., & Verhoeven, L. (2019). The role of prosody in reading comprehension: Evidence from poor comprehenders. *Journal of Research in Reading, 42*, 37–57. http://dx.doi.org/10.1111/1467-9817.12133

Jenkins, J. R., Fuchs, L. S., van den Broek, P., Espin, C., & Deno, S. L. (2003). Sources of individual differences in reading comprehension and reading fluency. *Journal of Educational Psychology, 95*, 719–729. http://dx.doi.org/10.1037/0022-0663.95.4.719

Juliah Mohamad Beon, (1993). *Stress and meaning: Malay UKM students' ability to apply English word stress*. Academic exercise. Universiti Kebangsaan Malaysia.

Just, M.A. & Carpenter, P.A. (1987). *The psychology of reading and language comprehension*. Boston: Allyn & Bacon.

Khor, C. P., Law, H.M., & Lee, L. W. (2014). Relationship between oral reading fluency and reading comprehension among ESL learners. GEMA Online, *Journal of Language Studies* 14(3), 1675-8021.

Klauda, S., & Guthrie, J. (2008). Relationships of three components of reading fluency to reading comprehension. *Journal of Educational Psychology, 100*(2), 310-321. https://doi.org/10.1037/0022-0663.100.2.310

Kuhn, M. R., Schwanenflugel, P. J., Meisinger, E. B., Levy, B. A., & Rasinski, T. V. (2010). Aligning theory and assessment of reading fluency: Automaticity, prosody, and definitions of fluency. *Reading Research Quarterly, 45*, 230 –251. http://dx.doi.org/10.1598/RRQ.45.2.4

Kuhn, M. R., & Stahl, S. A. (2003). Fluency: A review of developmental and remedial practices. *Journal of Educational Psychology, 95*, 3–21. http://dx.doi.org/10.1037/0022-0663.95.1.3

Kuşdemir, Y., & Bulut, P. (2018). The relationship between elementary school students' reading comprehension and Reading Motivation. *Journal of Education and Training Studies, 6(12*), 97-110

Kim, Y. G. (2015). Developmental, component-based model of reading fluency: An investigation of word-reading fluency, text-reading fluency, and reading comprehension. *Reading Research Quarterly, 50*, 459 – 481. http://dx.doi.org/10.1002/rrq.107

Kim, Y. G. Quinn, J. & Petscher, Y. (2020). Reading prosody Unpacked: A Longitudinal Investigation of Its Dimensionality and Relation with Word Reading and Listening Comprehension for Children in Primary Grades, *Journal of Educational Psychology, 108(5*), 1-22. Advance online Publication. https://dx.doi.org/10.1037/edu0000480.

Kim, Y. G. & Petscher, Y. (2020). Prosodic Sensitivity and Reading: An Investigation of Pathways of Relations Using a Latent Variable Approach. *Journal of Educational Psychology, 108(5*), 630-645.

Kim, Y. S. G., & Wagner, R. K. (2015). Text (oral) reading fluency as a construct in reading development: An investigation of its mediating role for children from grades 1 to 4. *Scientific Studies of Reading, 19,*

224–242. http://dx.doi.org/10.1080/10888438.2015.1007375

Kim, Y.-S., Park, C. H., & Wagner, R. K. (2014). Is oral/text reading fluency a "bridge" to reading comprehension? *Reading and Writing, 27*, 79 –99. http://dx.doi.org/10.1007/s11145-013-9434-7

Kim, Y.-S., Petscher, Y., Schatschneider, C., & Foorman, B. (2010). Does growth rate in oral reading fluency matter in predicting reading com- prehension? *Journal of Educational Psychology, 102*, 652– 667. http:// dx.doi.org/10.1037/a0019643

Kim, Y- S., Wagner, R. K., & Foster, E. (2011). Relations among oral reading fluency, silent reading fluency, and reading comprehension: A latent variable study of first-grade readers. *Scientific Studies of Reading,*

15, 338–362. http://dx.doi.org/10.1080/10888438.2010.493964

Kim, Y. S., Wagner, R. K., & Lopez, D. (2012). Developmental relations between reading fluency and reading comprehension: A longitudinal study from Grade 1 to Grade 2. *Journal of Experimental Child Psychology, 113,* 93–111. http://dx.doi.org/10.1016/j.jecp.2012.03.002

Kimelman, M.D.Z. (1999). Prosody, linguistic demands and auditory comprehension in aphasia. *Brain and Language*, 69, 212-221.

Kintsch, W. (1998). *Comprehension: A paradigm for cognition*. Cambridge, England: Cambridge University Press.

Kitzen, K. (2001). *Prosodic sensitivity, morphological, and reading ability in young adults with and without childhood histories of reading difficulty*. Unpublished doctoral dissertation, University of Colombia, Colombia

Kuşdemir, Y., & Bulut, P. (2018). The Relationship between Elementary School Students' Reading Comprehension and Reading Motivation. *Journal of Education and Training Studies*, *6*(12), 97. https://doi.org/10.11114/jets.v6i12.3595

Koriat, A. & Greenberg, S.N. (1991). Syntactic control of letter detection: Evidence from English and Hebrew nonwords. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 17(6), 1035-1050.

Koriat, A. & Greenberg, S. N. (1994). The extraction of phrase structure during reading: Evidence from letter detection errors. *Psychonomic Bulletin and Review*, 1(3), 345-356.

Koriat, A., Greenberg, S.N., & Kreiner, H. (2002). The extraction of structure during reading: Evidence from reading prosody. *Memory and Cognition*, 30(2), 270-280.

Mason, L. H., & Hagaman, J. L. (2012). Highlights in Reading Comprehension Intervention Research for Students with Learning Disabilities. *Mason, L. H., & Hagaman, J. L. (2012). Highlights in Reading Comprehension Intervention Research for Students with Learning Disabilities. Learning About Learning Disabilities*, 191–215.

Meyer, M.S., & Felton, R.H. (1999). Repeated reading to enhance fluency: Old approaches and new directions. *Annals of Dyslexia, 49*, 283-306.

Miller, J. & Schwanenflugel, P. J. (2006). Prosody of syntactically complex sentences in the oral reading of young children. *Journal of Educational Psychology*, 98(4), 839-853.

Paige, D., Rasinski, T., Magpuri-Lavell, T. & Smith, G. S. (2014). Interpreting the relationships among prosody, automaticity, accuracy and silent reading comprehension in secondary students. *Journal of Literacy Research*, 46(2), 123-156.

Paige, D., Rasinski, T., & Magpuri-Lavell, T. (2012). Is fluent expressive reading important for high school readers? *Journal of Adolescent & Adult Literacy, 56,* 67–76. http://dx.doi.org/10.1002/JAAL.00103.

Pinnel, G.S., Pikulski, J.J., Wixson, K.K., Campbell, J.R., Gough, P.B. & Beatty, A.S. (1995). *Listening to children read aloud: Oral Fluency*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Rahmawati, I. F. (2020). Modelling the Pattern of Relationship among Cognitive Learning Style, Reading Anxiety, Reading Strategy and Reading Comprehension of EFL University Students. *SKRIPSI Mah*asiswa *UM*.

Rasinski, T.V. (2003). *The fluent reader: Oral reading strategies for building word recognition, fluency and comprehension*. New York: Scholastic.

Rasinski, T.V. (2004). *Assessing reading fluency*. Honolulu, HI: Pacific Resources for Education and Learning.

Rasinski, T.V. & Zutell, J.B. (1990). Making a place for fluency instruction in the regular reading curriculum. *Reading Research and Instruction, 29 (2*), 85-91.

Rasinski, T.V., & Padak, N.D. (2001). *From phonics to fluency: Effective teaching of decoding and reading fluency in the elementary school.* New York: Longman.

Rasinski, T.V., Blachowicz, Camille & Lems, Kristin. (2006). *Fluency instruction: research-based best practices*. New York: The Guilford Press.

Rasinski, T.V., Rikli, A., & Johnston, S. (2009). Reading Fluency: More than automaticity? More than a concern for the primary grades? *Literacy Research and Instruction*, 48(4), 350-361.

Rayner, K., Foorman, B., Perfetti, C., Pesetsky, D., & Seidenberg, M. (2001). How psychological science informs the teaching of reading. *Psychological Science in the Public Interes*t, 2, 31-74.

Roomy, M., & Alhawsawi, S. (2019). Understanding Reading Strategies of EFL Saudi Students. *English Language Teaching, 12*(6), 33. https://doi.org/10.5539/elt.v12n6p33

Roehrig, A. D., Petscher, Y., Nettles, S. M., Hudson, R. F., & Torgesen, J. K. (2008). Accuracy of the DIBELS oral reading fluency measure for predicting third grade reading comprehension outcomes. *Journal of School Psychology, 46,* 343–366. http://dx.doi.org/10.1016/j.jsp.2007.06.006

Sabatini, J., Wang, Z., & O'Reilly, T. (2019). Relating reading comprehension to oral reading performance in the NAEP fourth-grade special study of oral reading. *Reading Research Quarterly, 54,* 253–271. http:// dx.doi.org/10.1002/rrq.226

Schreiber, P. A. (1991). Understanding prosody's role in reading acquisition. *Theory into Practice, 30,* 158 –164. http://dx.doi.org/10.1080/00405849109543496

Schwanenflugel, P. J., & Benjamin, R. G. (2017). Lexical prosody as an aspect of oral reading fluency. *Reading and Writing, 30,* 143–162. http://dx.doi.org/10.1007/s11145-016-9667-3

Schwanenflugel, P. J., Hamilton, A. M., Wisenbaker, J. M., Kuhn, M. R., & Stahl, S. A. (2004). Becoming a fluent reader: Reading skill and prosodic features in the oral reading of young readers. *Journal of Educational Psychology, 96,* 119 –129. http://dx.doi.org/10.1037/0022-0663.96.1.119

Schwanenflugel, P. J., Westmoreland, M. R., & Benjamin, R. G. (2015). Reading fluency skill and the prosodic marking of linguistic focus. *Reading and Writing, 28,* 9 –30. http://dx.doi.org/10.1007/s11145-013-9456-1

Samuels, S.J. (2002). Reading fluency: Its development and assessment. In E. Farstrup & S.J. Samuels (Eds.). *What research has to say about reading instruction.* 3rd ed. (166-183). Newark, DE: International Reading Association.

Samuels. S.J., & Farstrup, A.E. (2006), *What research has to say about fluency instruction*. Newark: International Reading Association

Schreiber, P.A. (1987). Prosody and structure in children's syntactic processing. In R. Horowitz & S.J. Samuels (Eds). *Comprehension oral and written language* (243-270). New York: Academic Press

Schunk, D. H. (2014). *Learning Theories, (Trans. M. Şahin).* Ankara: Nobel YayınDağıtım. In Kuşdemir, Y., & Bulut, P. (2018). The Relationship between Elementary School Students' Reading Comprehension and Reading Motivation. *Journal of Education and Training Studies*, 6(12), 97-110.

Segalowitz, N. (2000). Automaticity and attentional skill in fluent performance. In H. Roggenbach (Ed.), *Perspectives on Fluency* (200-219). Ann Arbor, MI: University of Michigan Press.

Shela, S. R. (2020). Seeing the 'Hidden' Disability: A Quantitative Analysis of the Reading Comprehension in English of Learners Suspected with Dyslexia. *Asian EFL Journal Research, 27(4),* 448-459.

Silverman, R. D., Speece, D. L., Harring, J. R., & Ritchey, K. D. (2013). Fluency has a role in the simple view of reading. *Scientific Studies of Reading, 17,* 108 –133. http://dx.doi.org/10.1080/10888438.2011.618153

Slowiaczek, M.L. & Clifton, C. (1980). Subvocalization and reading for meaning. *Journal of Verbal Learning and Verbal Behavior*, 19(5), 573-582.

Thomas, D. (1996). *Second language acquisition*. PPP-ITM: Mass Lecture.

Wallace, M. (2007). *Skills in English.* Cambridge: Cambridge University Press. In Roomy, M.A., & Alhawsawi, S. (2019). Understanding Reading Strategies of EFL Saudi Students. *English Language Teaching,* 12(6), 33-44.

Whalley, K. & Hansen, J. (2009). The role of prosodic sensitivity in children's reading development. *Journal of Research in Reading*, 29(3), 288-303.

Wolf, M. & Katzir-Cohen, T. (2001). Reading fluency and its intervention. *Scientific Studies of Reading*, 5, 211-238.

Veenendaal, N. J., Groen, M. A., & Verhoeven, L. (2015). What oral text reading fluency can reveal about reading comprehension. *Journal of Research in Reading, 38,* 213–225. http://dx.doi.org/10.1111/1467-9817.12024

Veenendaal, N. J., Groen, M. A., & Verhoeven, L. (2014). The role of speech prosody and text reading prosody in children's reading comprehension. *British Journal of Educational Psychology, 84,* 521–536. http:// dx.doi.org/10.1111/bjep.12036

Yildiz, M., Yildirim, K., Ates, S., Rasinski, T., Fitzgerald, S., & Zimmer- man, B. (2014). The relationship between reading fluency and reading comprehension in fifth-grade

Turkish students. *International Journal of School & Educational Psychology*, *2*, 35–44. http://dx.doi.org/10.1080/21683603.2013.854187

Zutell, J. & Rasinski, T.V. (1991). Training teachers to attend to their students' oral reading fluency. *Theory into Practice*, 30, 211-217.

English Collocations Improvement through Google Scholar

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Abstract

This study aims to check the naturalness of collocations produced by non-native speakers in the English language. To this end, the study has involved 20 ESL students in correcting one hundred collocations from their essays through Google Scholar (GS) consultation. The study has also involved three native English speakers checking the naturalness of collocations produced by students based on GS consultation. The findings show that GS has helped the users correct 62% of their collocations. The finding of the study has implications for the improvement of collocations using GS for English language learners.

***Keywords*:** Google Scholar, English Collocation, Data-driven learning, Corpus

1. Introduction

Google, as a giant, the ever-growing search engine, has facilitated human life tremendously. It has permeated human life, including education, particularly by launching Google Scholar (GS). GS has facilitated access to numerous articles from plenitude journals produced by scholars or native speakers. GS's motto is '*stand on the shoulders of giants*.' This fact implies that GS has access to a tremendous amount of web data produced by scholars.

Since this search engine has access to a massive amount of English data generated mainly by scholars and experts, it could be used for Data-Driven Learning (DDL) (Boulton & Cobb, 2017; Panah, Yunus, & Embi, 2013). DDL helps users benefit from authentic and natural language data to improve English language learning, particularly for writing improvement (Geluso, 2013; John, 1991). Correspondingly, GS supports DDL and helps learners improve their writing in terms of collocation (Acar, Geluso, & Shiki, 2011; Geluso, 2013; Gilmore, 2008; Shakib, Abd, Mohd, Heidari, & Panah, 2020; Panah, Yunus, & Embi, 2013).

Gilmore (2008) compared two online corpora (COBUILD and Collocation Sampler) in a Japanese university. He found that students' writing has significantly improved using these corpora with an accuracy of 61.14%. This fact suggests the importance of these corpora for language learning. Luo and Liao (2015) found that students preferred corpora to an online dictionary in correcting their lexico-grammatical errors. They showed positive perceptions of corpora use in writing improvement. Geluso (2013) indicated that the students corrected errors in their writing effectively using Google. Yoon (2014) introduced a suit of web-based concordancers, including Google, and reported 70% collocation correction accuracy. Likewise, Kotamjani et al. (2017) found that students used a suit of online sources, including Google, for writing improvement. They reported that students appreciated the applicability of Google as a

corpus tool for language learning. They solved their language problem significantly and satisfactorily.

Studies suggested that an educated native English speaker has a vocabulary repertoire of around seventeen thousand words (Goulden et al., 1990:356), which is a huge number though manageable for a determined ESL learner (Wu, Witten & Franken, 2010). However, a big issue is that a native speaker of English has an immense number of natural patterns such as idioms, expressions, and collocations (Wu, Witten, & Franken, 2010), which they frequently use in their communications (Bybee, 2006; Erman & Wrren, 2000; Tomasello, 2003). Consequently, acquiring collocations in English will be a cumbersome job for ESL learners because the native speaker has hundreds or thousands or even millions of collocations in their minds, which are very useful to construct language chunk where they produce them accurately, fluently, and naturally (Lewis, 2000; Wu, Witten & Franken, 2010).

An ESL learner may vacillate between two collocations such as ‘take an appointment’ or ‘make an appointment with the doctor; however, both patterns are grammatically correct. The collocation ‘take an appointment’ sounds weird and unnatural to English speakers (Geluso, 2013). This approach, called data-driven learning (DDL introduced by Johns, 1991), could help language learners. Accordingly, Scholars suggest that language learners can appreciate language data from corpora such as British National Corpora, COBUILD, and American COCA to extract language rules and regularities by being exposed to natural language data (Hunston, 2002; Mansour, 2017; Sha, 2010; Yoon, 2016). However, while natural data from such corpora facilitate language learning, they are not user-friendly and even sometimes complicated for a beginner EFL learner (Sha, 2010). To address the issue of DDL through the above corpora, scholars suggest that ESL learners can use Google Scholar (GS), a giant search engine that has access to an immense amount of web data (Brezina, 2012; Celik, 2011; Yoon, 2014). A GS search for confirming the naturalness of the above collocations, conducted in 2021, shows that the retrieval frequency for the collocation ‘*take an appointment* is 789, while the GS retrieval indicates the frequency of 46,200 for the collocation ‘*make an appointment*. A look-up of Cambridge Learner Dictionary also shows that the collocation 'make an appointment is more common and natural. This fact indicates that GS can be used for the verification of the naturalness of collocations. The function of GS as a natural source of language data is supported by the theory of usage-based language learning (Geluso, 2013), which will be discussed in the following section.

Studies on ESL students In South East Asia indicate that students' collocation is poor (Hong et al., 2011; Kamariah Yunus & Su’ad Awab’s , 2011). Quero (2017) highlighted the

importance of corpus for learning medical vocabulary. In this line, some researchers have suggested that corpora and concordance could be helpful to address the problem of learning language chunks and collocations (Hong et al., 2011; KamariahYunus & Su'adAwab's 2011). Nevertheless, a study on the use of concordancers, mainly GS, as a strong concordancer, has not been reported in context. Thus, a study is needed to bridge the gap in the literature, particularly in the Southeast Asia ESL context, to explore how the ESL learners use GS to correct their writing errors in terms of collocations. The current research aims to investigate the naturalness of collocations produced by students through GS consultation.

2. Literature Review

2.1 Data-Driven Learning (DDL) Approach

According to Boulton and Cobb (2017), DDL has different aspects: current linguistic theory, current learning theory, psycholinguistic theory, SLA research findings, and existing learner practice.

DDL reflects present linguistic theory as language is growingly seen as complex, dynamic, interactive, probabilistic, and patterned (Boulton & Cobb, 2017), which contrasts with the concept of the rule-governed system supported by structuralists. DDL is supported by the usage-based theory of language learning (Tomasello, 2003). Linguistic knowledge is regarded as a mental corpus of experiences of language usage. Corpus linguistics has provided many insights into language patterns such as lexical priming (Hoey, 2005), idiom principles (Sinclair, 1991), norms, and expectations (Hanks et al., 2013), formulaic language (Wray, 2002). DDL assists learners in dealing with authentic, natural language to deduct rules and regularities (Huston, 2002).

DLL reflects the present learning theory. It is argued that rules are complicated and artificial, while patterns are easy and natural. The human brain is wired and programmed to detect patterns in the universe (Barrett, Dunbar, & Lycett, 2002), which applies to language learning and using. This is consistent with the constructivism principle, allowing the language learner to explore target language norms through progressive approximations (Aston, 1998; Boulton and Cobb, 2017). DDL helps learners transfer this skill to novel contexts outside the classroom where autonomy and lifelong learning are involved.

DDL reflects the present psycholinguistic theory because pattern induction is regarded as a natural process, reducing the cognitive load of processing (Kalyauga, 2011), exempting the learner from the need for considerable effort to construct meaning (Hulstijn and Laufer, 2001). DDL facilitates access to a huge amount of language data needed, mainly organizing it

to facilitate pattern noticing (Schmit, 1990). DDL also supports the significance of chunking, supported by psycholinguistic evidence (Millar, 2011).

DDL reflects the present SLA research findings. Mainly a balance of top-down, bottom-up, and meaning-focused; form-focused has been suggested (Doughty & Williams, 1998) for language learning. However, in practice, the focus has been on grammar exercises and vocabulary lists where DDL can play a crucial role by balancing the approaches to language learning through access to natural language data in an organized way (Boulton and Cobb, 2017).

DDL reflects the current learner practice. Language learners have already been using Google as a giant concordancer and the web as a corpus to answer their language problems (Geluso, 2013). Proper application of DDL could guide them in keeping abreast of an immense amount of language data in a web corpus (Boulton, 2015).

2.2 Collocations and Corpus

The research in corpus linguistics has shifted to word co-occurrence and language chunk than single words (Ackermann and Chen, 2013; Granger & Meunier, 2008). Using frequency and probability, investigations have been done on word combinations in academic prose (Ackermann and Chen, 2013). Recent studies discussed the viability of an academic collocation (Durrant, 2009) and Simpson-Vlach and Ellis (2010).

In the corpus-based approach, phraseological units are identified using corpus data (Granger & Paquot, 2008). Colocation is seen as a continuum, which varies from a free combination (for example, produce an essay), through restrictive collocations (for example, make an appointment instead of taking an appointment), to frozen expressions (for instance, frankly speaking) (Ackermann and Chen, 2013).

Collocations appear to be recognized and used by native speakers effortlessly though they are not hassle-free for non-native speakers to acquire and employ properly. Nation (2001) asserts that collocations entail some grammatical or lexical elements which are unpredictable or inflexible. This characteristic of collocation poses challenges to language learners even at an advanced level (Wu 2010), particularly when it comes to the production of collocations, non-native speakers might stumble and hesitate about the accuracy of their colocation. It was found that learners employ wrong synonyms when articulating collocations (Biskup, 1992), and the interference of the first language accounts for 50% of collocation errors (Nesselhauf, 2005). Some learners use a limited number of colocations and overuse them or using inappropriate collocations cause non-native speakers to sound unnatural (Cobb, 2003). Hence,

to produce a second language fluently and naturally, language learners must be competent in collocation, producing, and understanding highly.

Given the importance of collocations, some scholars suggest that a dictionary covering an exhaustive list of collocations could be a solution (Sha, 2010). Nevertheless, due to the dynamic nature of language, textbooks and dictionaries might be obsolete and out of date. Some scholars suggest that traditional corpora (such as British national Corpora and American Coca) could be a solution to address this issue. Although traditional corpora cover most of the deficits of textbooks and dictionaries, they cannot provide a user-friendly environment and tool offered by Google (Sha, 2010). Google has access to a considerable amount of web data useful for language learning; however, it is noisy and messy since both professionals and nonprofessionals produce it. To cover the demerits of Google, scholars suggest that Google scholar is an excellent solution to access natural language data articulated by professional native speakers and experts (Brezina, 2012).

2.3 Collocation

Collocation is defined as "items that occur physically together or have stronger chances of being mentioned together" (Sinclair, 1991, p. 170). In a similar vein, Lewis (1997) defines collocation as "the readily observable phenomenon whereby certain words co-occur in natural text with greater than random frequency" (p. 8). Collocation, in other words, exists in statistically significant manners (Lewis, 2000). Furthermore, Hill (2000) observes that collocation deals with predictable word combinations. For instance, when the foot is used as a verb, it is highly likely that the following collocate, i.e., a word that has a strong tendency to co-occur with another, is the noun bill, as in foot the bill. Hill (2000) maintained that some collocations, known as solid collocations, are fixed or not much generative in the sense that they allow a minimal number of collocates. Table 1 illustrates a list of patterns and collocations common in English (Benson et al., 1986; Lewis, 2000).

Table 1: List of patterns and collocations

Pattern Type	**Example**
Verb+ noun (s):	Reviews the research
Verb +noun +noun:	Enliven their classroom, submit a report
Verb +adjective +noun (s):	Yielded conflicting results, revise the original plan
Verb + preposition:	Apply to,
Verb +preposition +noun (s)	Interviewed with students
Verb +adverb:	Keep abreast of, differ markedly, examine thoroughly

Noun + verb:	The fog closed in
Phrasal verb:	Turn out
Noun +preposition:	The risk of
Noun +noun:	Technology use, radio station
Noun +be +present participle:	The time is spent on
Noun +be +past participle:	Technology can be used
Noun +of +noun:	The risk of oversimplification
Compound noun:	Fire escape
Binomial:	Backward and forwards
Trinomial:	Hook, line, and sinker
Adjective +noun(s):	Life-long learning, a difficult decision
Adjective + noun +noun:	Varying level of performance
Adjective +adjective +noun(s):	Recent technological advances,
Verb +adjective:	Looks good
Verb (incl. phrasal) +adjective	Take up more
Verb +to verb	Begin to study
Adverb +verb:	Clearly demonstrated,
Adverb +adjective:	Almost immediate, extremely inconvenient
Adjective + preposition:	Accessible to, similar to
Fixed expression:	Needless to say that, with regard to,
Fixed phrase:	On the other hand
Semi-fixed expression:	See you tomorrow/later
Discourse marker:	To put it another way
Incomplete fixed phrase:	A kind of …..
Part of a proverb:	No pain,….
Part of a quotation:	To be or not to be

Adapted from Benson et al. (1986) & Lewis (2000)

2.4 Studies on Collocations

One of the most challenging areas of second language learning is learning collocations (Farrokh, 2012). Enhanced knowledge of collocation enables learners to improve accuracy and fluency (Bazzaz and Samad, 2011; Namvar, 2012). Collocations help learners listen, oral communication, reading, and writing (Bazzaz and Samad, 2011; Farrokh, 2012; Namvar,

2012). Pedagogically, it raises learners' awareness of language chunks and patterns used by native speakers in speaking and writing. However, studies show that learners have problems with collocations (lexical and grammatical).

Namvar (2012) found that language learners have difficulties in lexical and grammatical collocations in their writings. He also reported that there is a strong relationship between knowledge of collocation and language proficiency. Putri (2019) examined students written assignments and found that verb+noun (29 errors), adjective +noun (8), and verb+adverb (5). The interview findings indicated that students refer to dictionaries/books, ask the lecturer, and explore collocations to tackle the problem. A study by Hsu (2007) revealed a positive relationship between university students' frequency of using lexical collocation and their online writing scores. Hsu (2007) also reported a positive correlation between students' variety of lexical collocations and their writing scores.

Bazzaz and Samad (2011) found a strong positive correlation between knowledge of collocations and the use of verb+noun collocation in writing. Hsu and Chiu (2008) found a significant relationship between learners' knowledge of lexical collocation and their speaking proficiency. However, there was no significant relationship between students' use of collocation and their speaking proficiency. Jeaco (2017) examined software called the Prime Machine as a corpus tool to see its usefulness for language learning through a survey questionnaire. He found that the to is simple to operate and offers valuable information for language learning. Studies show the importance of collocations in both speaking and writing; however, there is a paucity of studies on search engines like Google Scholar for improving collocations.

2.5 Research Question

Following the Literature Review, the Research Question is formulated as follows:

1) Does Google Scholar improve students’ English Collocation?

3. Methodology

This research employs a quantitative approach using a rubric for assessing the naturalness of GS drafted collocations from the point of view of native speakers of English. The study adapted the rubric proposed by Gilmore (2008). The rubric had two options: natural and unnatural. The study recruited three native English speakers, as experts, from America, England, and Australia to assess the naturalness of collocations produced through GS consultation using the rubric. The experts have done the blind rating of the collocation produced by the students. The study involved 20 ESL learners studying at the national

university of Malaysia, Universiti Kebangsaan Malaysia (UKM), from different countries: Malaysia, Indonesia, and Brunei.

3.1 Participants

The study participants were 20 student teachers from Malaysia, Indonesia, and Brunei who were studying for a degree in TESOL at the national university of Malaysia (UKM). The students were junior and taking an academic writing course. One of the researchers taught them the course and introduced them to Google Scholar to improve their writing in collocation.

3.2 Instruments

Composition Test

The students were asked to produce a composition with 300 words in an allocated time of 40 minutes. The composition topic was 'Technology for Education**.**'

Rubric

The study adapted a rubric proposed by Gilmore (2008). The rubric had three options: natural, unnatural. Natural refers to collocations produced or perceived in natural language by native speakers, while unnatural collocation refers to the wrong or uncommon combination of words produced by non-native speakers.

Native speakers

The study recruited four native speakers to blind rate the collocations produced by students. The native speakers were selected from the US, England, and Australia. The researchers have met two native speakers face-to-face (Stacy and Mark), and Conroy was contacted online. The rubric and list of collocations (pre-GS drafting and post-GS drafting) and instructions were provided for the raters. The following table illustrates the native speakers' demographics.

Table 3: Native speaker demographics

No.	Native speaker	Country	Profession
1	Conroy	Australia	Education lecturer
2	Stacy	The US	English Lecturer
3	Mark	The UK	English lecturer

Materials

The materials comprise the essays written by TESOL student teachers in their academic writing course. The rubric and native speakers were also employed to assess the naturalness of collocations.

3.3 Technique of collecting data

Two experts examined the formulated sentences in essays by students in English language teaching. Besides, three native speakers were recruited to use a rubric in assessing students' colocations.

3.4 Techniques of analyzing data

The data obtained through the rubric was analyzed using percentage and frequency. The frequency of collocations assigned as natural and unnatural were measured and presented in percentage.

3.5 Study Procedure

The study first selected twenty TESOL students through purposive, convenience sampling. In inconvenience sampling, researchers select information-rich participants and participate in the study (Creswell, 2002). One of the researchers taught TESOL academic writing to the current study participants and introduced corpora and Google Scholar to the students. It would assist students in improving their writing in terms of using natural collocation; hence, their participation in the study was not taxation. The researcher has got the students to write essays on 'the use of technology for language learning. On average, each student composed an essay of two 400 words in one hour. After introducing students to GS to verify their collocations, they followed the instructions and corrected their collocations by consulting GS. They have corrected their collocations based on the frequency of occurrence on the web, for example, a comparison of two collocation done in April 2021: '*powerful argument'* (About 53,800 results (0.13 sec) and '*strong argument'* (About 301,000 results (0.08 sec), consulted with GS shows that the latter is more frequent than the former. This fact is also confirmed by Cambridge Online Dictionary, indicating that a '*strong argument*' is more common and natural than a '*powerful argument*.' Subsequently, the researchers highlighted two hundred pairs of collocations (the original collocation and GS drafted ones) and asked the native speakers to blind rate them using the rubric.

4. Findings

This section presents the findings of the native speaker's assessment of the naturalness of the collocations produced by TESOL student teachers due to GS consultation.

Table 4: A list of patterns and collocations corrected by TESL student teacher

No.	Collocation	Frequency of highlighted collocations	Frequency of corrected collocations	Correction percentage
1	Verb+ noun(s)	55	40	**72%**
2	Verb+ noun +noun	17	7	41%
3	Verb+ adjective +noun(s)	6	3	50%
4	Verb + preposition	33	25	**76%**
5	Verb+ preposition +noun(s)	25	14	56%
6	Verb +adverb	10	7	**70%**
7	Noun +preposition	15	9	60%
8	Noun +noun	50	40	**80%**
9	Noun +be +present participle	12	5	42%
10	Noun +be +past participle	10	4	40%
11	Noun +of +noun	20	10	50%
12	Adjective +noun(s)	44	30	**68%**
13	Adjective + noun +noun	20	8	40%
14	Adjective+ adjective +noun(s):	7	3	42%
15	Verb +adjective:	6	3	50%
16	Verb (incl. phrasal) +adjective	6	2	33%
17	Verb +to verb	20	10	50%
18	Adverb +verb	11	7	**64%**
19	Adverb +adjective	40	25	**62.5%**
20	Adjective + preposition	9	5	56%
21	Fixed expression	7	4	57%
	Total	423	261	62%

As illustrated in Table 4, data analysis indicates that the students have corrected 21 collocations through GS consultation totaling 261 (62%) from 423 collocations. The most corrected collocations with the correction percentage of above 60 are noun+noun (80%), verb preposition (76%), verb+noun (72%), verb+adverb (70%), Adjective+noun (68%),

adverb+verb(64%), adverb+adjective (62.5%) subsequently, while Verb (incl. phrasal) +adjective comprise the least corrected collocation with 33%. It is revealed that noun+noun collocation has the highest percentage of correction.

5. Discussion

The effect of using GS for collocation naturalness was examined. The findings showed that overall the students corrected 62% of the collocation. This means that they have produced natural collocations through GS consultation with an accuracy of 62%. This is consistent with the finding of a study by Gilmore (2009), who reported that his students had corrected 61.14% of collocations through using online concordancers. However, it is less than the correction percentage reported by Yoon (2014). The most frequently corrected collocation was noun+noun. The explanation might be that comparing a set of noun combinations and checking their accuracy through GS frequency is done more effectively than other collocations. The second highly corrected collocation was verb+preposition. The justification maybe is that GS allows users to compare two sets of verb+ preposition effortlessly. For example, comparing two collocations, namely, 'assist in' vs. 'assist at' based on the frequency of occurrence, using quotation marks “," produces about 97,300 results for the former and about 4,700 results for the latter, which enables the user to select the former collocation as the natural one. Literature also shows that students can correct verb preposition collocations more effectively (Saeedakhtar, Bagerin, & Abdi, 2020) using other concordancers. Literature also evidences that verb+noun and Adjective+noun are frequently corrected through corpora consultation (Huang & Tsao, 2019). Verb+adverb and adverb+adjective were also highly corrected, which occur massively in web corpora. The least corrected collocation is a verb (incl. phrasal) +adjective, and the explanation may be that it is not easy to find an alternative to compare and decide on the naturalness of the given collocation, posing more challenges to the students,

One of the main reasons for the low correction percentage of some collocation types may be a lack of training in GS. Students need to learn how to find a suitable alternative to compare in GS, which could be challenging for some students with insufficient training. Another justification might be associated with the nature of data retrieved by GS since some language data produced by non-native speakers are not correct or natural. Another explanation could be that some students use their knowledge to correct the highlighted collocations, increasing or decreasing natural collocations.

Overall, the finding of the current study confirms the findings in literature in terms of DDL, indicating that GS could be used as a concordancer and web as a corpus for improving

language learning in terms of collocation (Brezina, 2012; Geluso, 2013; Gilmore, 2008; Luo & Liao, 2015; Kotamjani et al., 2017). The study's findings show that the usage-based theory of language acquisition applies to GS consultation for language learning and collocation improvement.

However, due to highlighting the erroneous word combinations and raising students' awareness, students might know to correct some collocations without referring to GS. Furthermore, using GS for correcting collocations poses challenges to ESL learners. For example, finding a proper alternative to compare would be a challenge for language learners. Sometimes, two or more collocations of a given the word are correct, while in some contexts, only one combination of two words is natural. Despite these challenging issues, the problem of using GS as a concordancer and web as a corpus might boil down through well-planned activities and proper training.

5.1 Theoretical Implication

As previously discussed, DDL has different aspects, namely, reflecting current linguistic theory, current learning theory, psycholinguistic theory, second language acquisition (SLA) research findings, and existing learner practice (Boulton and Cobb, 2017). The finding of this study verified that GS as a concordancer and web as a corpus support DDL in correcting erroneous collocations leading to their naturalness based on native speaker's assessments. It was shown that natural language, retrieved by GS, is complex, dynamic, interactive, and probabilistic, and patterned.

These features allow the learner to explore the rules and regularities of the language inductively by examining natural language data which are also consistent with the constructivism theory of language learning. Since GS and DDL revolve around the frequency of occurrences of collocations on the web, the principles of the usage-based theory of language learning (use and function based on probability) are supported (Tomasello, 2003). GS and DDL support psycholinguistic theory since pattern induction is regarded as a natural process, reducing the cognitive load of language processing (Kalyuga, 2012), where language chunks and collocations are natural language patterns retrieved (Millar, 2011).

GS also supports SLA research findings by balancing the top-down vs. bottom-up and meaning-focused vs. form-focused approach of language learning. Lastly, as learners are already using GS for extracting journal articles, proper guidance and training in GS as a concordancer and web as a corpus could alleviate the issues around GS use and boost the effective use of this tool for collocation improvement and language learning.

6. Conclusions and Recommendation

The current research study attempted to assess the correctness or naturalness of GS composed collocation from the point of expert native speakers of English. The finding shows that, on average, TESOL student teachers corrected their collocations through GS consultation with an accuracy of 62%. This study has implications for students, instructors, and researchers. Students may benefit from a popular search engine, GS, to extract journal articles and as a concordancer to improve the naturalness and correctness of their collocations. This research puts a valuable tool in the hands of instructors that could be used in teaching and testing language. Researchers may benefit from this study for conducting a large-scale study with a more significant number of students and collocations.

This study has come up with rewarding findings; however, some limitations need to be addressed. A study with more collocations and a more significant number of expert native speakers for assessing the naturalness of collocations in students' writing could be of interest. A future study might monitor students' use of GS for correcting collocation through the think-aloud approach. It should be mentioned that the findings of the current study should be interpreted and generalized in light of the limitations. The findings might open a new venue for research on GS as a concordancer and the web as a corpus to accelerate their application among students, particularly TESOL and ESL learners.

References

Acar, A., Geluso, J., & Shiki, T. (2011). How can search engines improve your writing? Language, *CALL-EJ*, 12(1), 1-10.

Bazzaz, F. E., & Samad, A. A. (2011). The Use of Verb Noun Collocations in Writing Stories among Iranian EFL Learners. English Language Teaching, 4(3), 158-163.

Benson, M., Benson, E., & Ilson, R. (1986a). The BBI combinatory dictionary of English: A guide to word combinations. (pp.i-v). Amsterdam: John Benjamins.

Boulton, A., & Cobb, T. (2017). Corpus use in language learning: A meta-analysis. Language Learning, 67(2), 348-393.

Brezina, V. 2012. Google Scholar as a linguistic tool: new possibilities in EAP. C. Gkitsaki, and R. Baldauf (eds.), *The Future of Applied Linguistics: Local and Global Perspectives. Newcastle upon Tyne: Cambridge Scholars Publishers.*

Bybee, J. 2007. *Frequency of use and the organization of language.* Oxford: Oxford University Press.

Chan, T. P., &Liou, H. C. (2005). Effects of web-based concordancing instruction on EFL students' learning of verb-noun collocations. *Computer Assisted Language Learning*, *18*(3), 231-251.

Celik, S. 2011. Developing collocation competence through web-based concordance activities. *Novitas-ROYAL (Research on Youth and Language)*,*5*(2): 273-286.

Creswell, J. W. (2002). Educational research: Planning, conducting, and evaluating quantitative (pp. 146-166). Upper Saddle River, NJ: Prentice-Hall.

Erman, B., & Warren, B. 2000.The idiom principle and the open choice principle.Text, 20, 29–62.

Farrokh, P. (2012). Raising awareness of collocation in ESL/EFL classrooms. Journal of Studies in Education, 2(3), 55-74.

Ghalebi, R., &Sadighi, F. (2015). The Usage-based Theory of Language Acquisition: A review of Major Issues. Journal of Applied Linguistics and Language Research, 2(6), 190-195.

Geluso, J. (2013). Phraseology and frequency of occurrence on the web: native speakers' perceptions of Google-informed second language writing. Computer Assisted Language Learning, 26(2), 144-157.

Gilmore, A. (2008). Using online corpora to develop students' writing skills.ELT Journal, 63(4), 363-372.

Goulden, R., Nation, P. and Read, J. 1990. How large can a receptive vocabulary be? *Applied Linguistics*, 11(4): 341–363.

Hanks, P., & Allan, K. (2013). Lexicography from earliest times to the present. The Oxford Handbook of the History of Linguistics, 503-536.

Hoey, M. P. (2005). Lexical priming: A new theory of words and language. London: Routledge

Hong, A. L., Rahim, H. A., Hua, T. K., &Salehuddin, K. (2011). Collocations in Malaysian English learners' writing: A corpus-based error analysis. *3L: Language, Linguistics, Literature,17(Special Issue)*,31-44.

Huang, P. Y., & Tsao, N. L. (2019). Using collocation clusters to detect and correct English L2 learners' collocation errors. Computer Assisted Language Learning, 1-27.

Hunston, S. (2002). Corpora in applied linguistics.*Cambridge: Cambridge University Press*.

Hsu, J. Y. (2007). Lexical Collocations and Their Impact on the Online Writing of Taiwanese College English Majors and Non-English Majors. Online Submission.

Hsu, J. Y., & Chiu, C. Y. (2008). Lexical collocations and their relation to speaking proficiency of college EFL learners in Taiwan. Asian EFL Journal, 10(1), 181-204.

Jeaco, S. (2017). Helping Language Learners Get Started with Concordancing. TESOL Internationa Journal, 12(1), 91-110.

Johns, T. 1991. Should you be persuaded: Two examples of data-driven learning.InT. Johns and P. King (Eds.), Classroom Concordancing.*English Language Research Journal*, 4:1-16.

Kalyuga, S. (2012). Instructional benefits of spoken words: A review of cognitive load factors. Educational Research Review, 7, 145–159

KamariahYunus&Su'adAwab. (2011). Collocational competence among Malaysian Law undergraduate students. *Malaysian Journal of ELT Research*,7(1),151-202.

Kotamjani, S. S., Razavi, O. F., &Hussin, H. (2017). Online Corpus Tools in Scholarly Writing: A Case of EFL Postgraduate Student. *English Language Teaching*, *10*(9), 61-68.

Luo, Q., & Liao, Y. (2015).Using corpora for error correction in EFL learners' writing.*Journal of Language Teaching and Research, 6*(6):1333-1342.

Lewis, M .2000.*Teaching Collocations*. Hove: Language Teaching Publications.

Mansour, D. (2017, June). Using COCA to Foster Students' Use of English Collocations in *Academic Writing. In Proceedings of the 3rd International Conference on Higher Education Advances (pp. 600-607). Editorial UniversitatPolitècnica de València*.

Namvar, F. (2012). The relationship between language proficiency and use of collocation by Iranian EFL students. 3L: Language, Linguistics, Literature®, 18(3).

Panah, E., Yunus, M. M., &Embi, M. A. (2013). Google-informed pattern-hunting and pattern-defining: Implication for language pedagogy. *Asian Social Science, 9*(3), 229−238.

Putri, R. (2019). An Analysis of Collocations Used in Written Assignment (Doctoral dissertation, UIN Ar-Raniry Banda Aceh).

Quero, B. (2017). A Corpus Comparison Approach for Estimating the Vocabulary Load of Medical Textbooks Using the GSL, AWL, and EAP Science Lists. TESOL International Journal, 12(1), 177-192.

Saeedakhtar, A., Bagerin, M., & Abdi, R. (2020). The effect of hands-on and hands-off data-driven learning on low-intermediate learners' verb-preposition collocations. System, 91, 102268.

Sha, G. (2010). Using Google as a super corpus to drive written language learning: a comparison with the British National Corpus. Computer Assisted Language Learning, 23(5), 377-393.

Shakib, S., Abd, A., Mohd, A. B., Heidari, M., & Panah, E. (2020). Perceptions of ESL Students about Using Web-Concordancing and Language Reference Resources in Academic Writing. *Humanities and Social Sciences Letters,* 8(3), 331-341.

Sinclair, J. (1991). Corpus, concordance, collocation. Oxford: Oxford University Press.

Tomasello, M. (2003). Constructing a language: A usage-based theory of language acquisition. *Cambridge, MA: Harvard University Press.*

Wray, A. (2002). Formulaic language and the lexicon. Cambridge: Cambridge University Press.

Wu, S., Witten, I. H., & Franken, M. (2010). Utilizing lexical data from a Web-derived corpus to expand productive collocation knowledge. *ReCALL*, *22*(1), 83-102.

Yoon, C. (2014). *Web-based Concordancing and Other Reference Resources as a Problem-solving Tool for L2 Writers: A Mixed Methods Study of Korean ESL Graduate Students' Reference Resource Consultation* (Doctoral dissertation, University of Toronto).

Yoon, C. (2016). Concordancers and dictionaries as problem-solving tools for ESL academic writing. *Language Learning & Technology*,20(1),209-229

Tertiary Students' Preference of Online Educational Games in the Language Learning Course

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Abstract

The current study investigates the factors that determine tertiary students' preference for online Educational Game (EG) in language learning courses, drawing on a combination of the Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT) theories. Accordingly, the study examines several factors such as Performance Expectancy (PE), Effort Expectancy (EE), Learning Opportunity (LO), and Attitude (ATT) towards Students' Preferences (SP) to use EG in a model based on TAM. The study adopts a survey approach using a questionnaire with its items adopted and adapted for the context of tertiary study. The obtained data were analyzed using SPSS version 26 performing descriptive and inferential statistics (correlation and regression). The findings show that LO (β= .210, P=.027), EE (β=.199, P= .035), ATT (β= .349, P=.000) are significant determinants of SP in language learning course, while PE (β=.060, P=527) is not a strong predictor of SP. The study's findings may have implications for teachers, students, EG designers, stakeholders, and policymakers in building understanding students' perceptions of EG, thus providing guidelines in designing and implementing EG.

Keywords: *Online Educational Games, Students' Preferences, TAM and UTAUT, Performance Expectancy, Effort Expectancy, Learning Opportunity, Attitude*

1. Introduction

Owing to the advent of ever-growing technology, all walks of human life, including the entertainment industry, have enormously been affected. As one of the main entertainments of people, online games have massively been built targeting all age groups from generations Z, through Y, and X to baby boomers. A new generation of Information Communication Technology (ICT) and media users are referred to as the 'net generation,' 'digital natives, 'screenagers,' and 'game generations' whose lives have massively been shaped by ICT and the internet. They grow up with social networking apps and games (Bourgonjon et al., 2010). Hence, it is argued that these learners have acquired specific technical ICT-related skills, new ways of thinking, and learning preferences, requiring a novel educational approach involving games (Bourgonjon et al., 2010).

Games, as embedded new educational approaches, reflect the practical translations of the current learning theories. They promote learning in new contexts, support self-regulated, problem-based, inquiry-based, and discovery learning. They could be interdisciplinary and incorporate several knowledge domains (Watson, 2007). It is evidenced that games develop

positive attitudes in students towards learning different subjects (Padilla-MeléNdez, Del Aguila-Obra, & Garrido-Moreno, 2013) since they intrinsically motivate students (Eseryel, Law, Ifenthaler, Ge, & Miller, 2014). Due to the prevalence of online games, numerous app developers have noticed the application of games to education. Notwithstanding the tedious, traditional teacher-centered approach to teaching and learning, online educational games (EGs) provide an engaging and fun environment for learners. EGs are an essential learning tool for the 21st century (Bourgonjon et al., 2010; Ibrahim et al., 2011). Young learners are generation Y and Z, known as digital natives, can immensely appreciate the benefit of EGs for learning subjects. Some scholars argue for the use of EGs for teaching and learning. However, little research was conducted on EG in the Malaysian context by Ibrahim et al. (2011; 2017), who assessed online game, acceptance models. More studies are needed to assess their model in a different university context.

Bearing these in mind, since there is little knowledge available regarding students' preference for online EG, there is a need to study EG students' preference for learning. Students are the key players in game-based learning; however, their attitudes and preferences are ignored when it comes to game-based learning adoption (Padilla-MeléNdez et al., 2013; Seddon & Biasutti, 2009). Understanding students' preferences for EG could significantly help instructors integrate EG into the classroom and enhance the learning process. Besides, app designers might gain better insights into students' preferences concerning EGs and improve their online game quality accordingly.

The objective of the current study is to examine students' preference for online EGs for learning empirically. To this end, Technology Acceptance Model (TAM) (Davis, 1989) was adopted and extended to propose a model of understanding and predicting students' preferences for online EG.

2. Literature Review

This section presents the reviews and analysis of previous studies on game-based learning. Bourgonjon, Valcke, Soetaert, and Schellens (2010) extended the TAM model and involved a sample of 858 secondary school students in examining the factors of experience, preference, usefulness, ease of use, and learning opportunities in using game-based learning. They found that usefulness, ease of use, learning opportunities, and personal experience significantly affect students' preferences. Similarly, Ibrahim, Wahab, Yusoff, Khalil, Desaru, and Jaafar (2011) extended the TAM model to assess the effect of factors of preferences, performance expectancy, effort expectancy, learning opportunity, and attitude on EG use

involving a sample of 51 university students. The findings indicated that effort expectancy and attitude significantly influenced preferences. Likewise, Padilla-MeléNdez, Del Aguila-Obra, and Garrido-Moreno (2013) extended TAM and surveyed 484 students to assess a model focusing on perceived ease of use, perceived usefulness, attitude, intention to use, and playfulness. The result of their study revealed that perceived ease of use, perceived usefulness, attitude, intention to use, and playfulness are significant determinants of EG use. Correspondingly, Eseryel, Law, Ifenthaler, Ge, and Miller (2014) adopted a technology theory with 88 high school students and assessed a model with the factors of engagement, interest, competence, autonomy, relatedness, and self-efficacy. They indicated that learners' motivation is a determinant of their engagement during gameplay. They found that motivation helps to develop competencies and complex problem-solving. It was found that learner's motivation, problem-solving, engagement, and performance are significantly impacted by the design and nature of game tasks.

In a relevant study, Lin, Chiu, Chen, Wuang, Chen, Wang, and Ho (2017) adopted TAM involving the factors of learner-system interaction, learner-instructor interaction, ease of use, usefulness, playfulness, satisfaction, and continued use involving a sample of university 150 students. They found that ease of use and usefulness were positively related to both learner-system interaction and learner-instructor interaction. It was also indicated that perceived playfulness was positively associated with learner-system interaction and not with learner-instructor interaction. In a study, Ibrahim, Masrom, Yusoff, Zainuddin, and Rizman (2017), extended TAM and tested a model with performance expectancy, effort expectancy, learning expectancy, attitude, self-efficacy, anxiety, enjoyment, and behavioral intention. They distributed a questionnaire to a sample of 180 university students. It was found that effort expectancy, learning expectancy, enjoyment, and attitude were significant predictors of EG use. Martí-Parreño, Galbis-Córdova, and Miquel-Romero (2018) adopted an information system model involving a sample of 128 undergraduate students assessing the effect of some factors such as attitude, relevance, confidence, media affinity, and self-efficacy on game-based learning. The finding shows that attitude and relevance, both positively and negatively, affect game-based learning. Sivo, Ku, and Acharya (2018) adopted the perceived resources and technology acceptance model (PRATAM) and involved 115 university students. They found that perceived resources, usefulness, ease of use, behavioral attitude intention, and actual use behavior instrument are significantly correlated and affect the actual user behavior.

In a study, Camilleri and Camilleri (2019) combined TAM, TPB, and UTAUT factors and assessed a model with five factors: behavioral intention, usefulness, normative pressures,

enjoyment, and ease of use. They conducted a survey involving 148 students. The study result indicates no significant relationship between ease of gameplay and the students' enjoyment in engaging with the school's digital games. Rahardja, Hariguna, and Aini (2019) combined Innovation Diffusion Theory (IDT) and Expectation Confirmation Model (ECM) and tested a model with the factors of continued use, usefulness, satisfaction, student habitual, satisfaction and traceability. The sample comprised 164 students. They found that usefulness, student satisfaction, and student habitual significantly affect continued use, while students' satisfaction was impacted by usefulness and traceability. Table 1 summarizes several studies on EG for enhancing teaching and learning, which are presented chronologically.

Table 1: Summary of Previous Studies

Author(s), Year	Model	Design	Factors	Findings
Bourgonjon, Valcke, Soetaert, & Schellens, (2010)	Extended TAM	858 secondary school students	Experience, preference, usefulness, ease of use, learning opportunities,	Usefulness, ease of use, learning opportunities, and personal experience significantly affect students' preferences.
Ibrahim, Wahab, Yusoff, Khalil, Desaru, & Jaafar, (2011)	Extended TAM	51 university students	Preferences, performance expectancy, effort expectancy, learning opportunity, and attitude	Effort expectancy and attitude significantly affect preferences.
Padilla-MeléNdez, Del Aguila-Obra, & Garrido-Moreno, (2013)	Extended TAM	484 Students	Perceived ease of use, perceived usefulness, attitude, intention to	Perceived ease of use, perceived usefulness, attitude, intention to use, and playfulness are significant.

			use, playfulness	
Eseryel, Law, Ifenthaler, Ge, & Miller, (2014)	Non-TAM	88 high school students	Engagement, Interest, Competence, Autonomy, Relatedness, Self-efficacy	Learners' motivation is a determinant of their engagement during gameplay. •development of competencies and complex problem-solving. •learner's motivation, problem-solving, engagement, and performance are significantly impacted by the design and nature of game tasks.
Lin,Chiu, Chen, Wuang, Chen, Wang, & Ho (2017)	Extended TAM	150 Students	Learner-system interaction, Learner-instructor interaction, ease of use, usefulness, playfulness, satisfaction, and continued use	•Ease of use and usefulness were positively related to both learner-system interaction and learner-instructor interaction. •Perceived playfulness only has a positive association with learner-system interaction and not with learner-instructor interaction.

Ibrahim, Masrom, Yusoff, Zainuddin, & Rizman, (2017)	Extended TAM	180 university students	Performance Expectancy, Effort Expectancy, learning expectancy, Attitude, Self-efficacy, Anxiety, Enjoyment, and Behavioural Intention,	Effort expectancy, Learning expectancy, enjoyment, and attitude were significant.
Martí-Parreño, Galbis-Córdova, & Miquel-Romero, (2018)	Non-TAM	128 undergraduate students	Attitude, Relevance, Confidence, Media affinity, Self-efficacy	Attitude and relevance, both positively and negatively, affect.
Sivo, Ku, & Acharya, (2018)	the perceived resources and technology acceptance model (PRATAM)	115 students	Perceived resources, usefulness, ease of use, Attitude, Behavioural intention and actual use behavior instrument	The constructs are significantly correlated and affect the actual user behavior.
Camilleri & Camilleri, (2019)	TAM, TPB, UTAUT	148 school students	behavioral intention, usefulness,	no significant relationship between ease of gameplay and

			normative pressures, enjoyment, and ease of use	the students' enjoyment in engaging with the school's digital games
Rahardja, Hariguna, & Aini, (2019)	Innovation Diffusion Theory (IDT) and Expectation Confirmation Model (ECM)	164 students	continued use, usefulness, satisfaction, student habitual, satisfaction, and traceability	usefulness, student satisfaction, and student habitual significantly affected continued use, while student satisfaction was impacted by usefulness and traceability.

Table 1 displays that most of the studies on EG learning have adopted or extended the technology acceptance model (TAM). Three studies have utilized other technology related theories (Eseryel, Law, Ifenthaler, Ge, & Miller, 2014; Martí-Parreño, Galbis-Córdova, & Miquel-Romero, 2018; Rahardja, Hariguna, & Aini, 2019). The findings of the above-discussed studies suggest that EG can be an effective tool for learning, though it has not been adopted by institutes satisfactorily (Camilleri & Camilleri, 2019). Different barriers such as students, instructors, technology, and administrators could hinder its prevalent usage. Other EG adoption barriers are hardware access, technical support, game-based software familiarity, the community of practice, time, learning group, and cost (Ibrahim et al., 2011).

However, although some studies were conducted in the Malaysian context (Ibrahim et al. 2011 & 2017), there is a paucity of empirical studies on online EG preference in Malaysia and Indonesia, where EG is not the mainstream educational approach. Hence, it is crucially important that a study be conducted to investigate students' preferences for using EG before adopting it in mainstream courses.

2.1 Online Game-Based Learning and Language Learning

It is widely accepted that online educational games (EGs) help improves language skills (speaking, reading, listening, and writing) and components (pronunciation, grammar, vocabulary). Several studies have attempted to explore the role of online game-based learning in language learning. Asiri (2019) attempted to explore the factors of using gamification from

teachers' perspectives. The study involved 157 English language teachers who answered the questionnaire. The findings show that attitude, usefulness, and social influence significantly predict teachers' intention to utilize gamification. Pardoel (2018) investigated the effect of gamification on school students' language learning experiences in the classroom and highlighted its impact on students' language learning. Dehghanzadeh et al. (2019) conducted a systematic literature review of articles on language learning. The study reviewed 22 studies on gamification between 2008 and 2019. The review findings indicated that gamification positively influenced language learning. They reported that enjoyment, engagement, motivation, and fun were positive experiences of language learners. Besides, content language learning, satisfaction, motivation were targeted learning outcomes in game-based learning.

Likewise, Hung, Chang, and Yeh (2016) carried out a systematic literature review of articles published on game-based learning between 2010 and 2014. It was found that many studies were conducted on language learning; however, they are inconclusive with mixed results. Lin et al. (2018) conducted a mixed-method study including experimental study and interview found that game-based learning is effective for language learning. Yukselturk, Altıok, and Başer (2018) conducted a study to examine the effect of gamification on language learning. The study involved 62 students in experimental design followed by a questionnaire that measured attitude and self-efficacy beliefs to English. The findings show that there was an improvement in attitude and self-efficacy regarding EG use. Berns et al. (2016) conducted a mixed-method study (interview, experimental), adopting a technology acceptance model, to examine the effect of hybrid game-based learning.

The study involved 104 German language students in measuring learner perceived usefulness, motivation, and added values of EG learning. The study also examined the effect of EG use on language learning. It was found that this game supports language learning, collaboration, motivation, usefulness, and added value, and game-based learning significantly enhanced language learning proficiency. Gamlo (2019) attempted to measure the integration of mobile game-based learning on students' motivation for language learning. The study used a questionnaire to determine students' motivation. It was found that students had positive attitudes towards apps for motivation and language learning. Blume (2020) surveyed pre-service English teachers' beliefs and behavior towards digital game-based learning adopting the technology acceptance model. The findings indicated that the teachers had positive attitudes and beliefs towards online game-based language learning. Franciosi (2017) investigated the effect of a computer game-based approach on vocabulary learning. The study adopted a quasi-

experimental design and test of vocabulary in a writing task. The results revealed that game-based language was learning enhanced learner's vocabulary.

Kijpoonphol and Phumchanin (2018) investigated game-based teaching and students' satisfaction in an experimental design involving two classes of secondary school students. The findings indicated that the experimental group had more satisfaction than the control group, and it was indicated that game-based teaching positively contributes to learning phrasal verbs. Examining the effect of video games on vocabulary tests learning in using test in a case study, Hendra (2018) reported that students, who had vocabulary encounter while playing games, had a better vocabulary. The qualitative data showed that students' motivation was increased through game-based learning. Alharbi (2020) discussed online game-based learning and language improvement and found that game-based learning positively contributes to language learning. Alharthi (2020) used a mixed-method study to assess game-based learning through Kahoot in language learning involving 36 students in an experimental study. The study findings revealed that Kahoot enhances the learning process and improves motivation, engagement, and classroom dynamism.

However, there is a lack of study on university students' preferences for game-based learning, particularly in Malaysia and Indonesia, where the governments are encouraging the instructors to embed gamification into mainstream higher education.

2.2 Theoretical framework

Technology Acceptance Model (TAM) is initially driven from the Theory of Reasoned Action (TRA) (Davis, 1989; Fishbein & Ajzen, 1975). TRA is a socio-psychological theory that defines the relationships between attitudes, beliefs, intentions, norms, and behaviors. It shows that intentions to perform the behavior determine individual behavior in utilizing technology (Fishbein & Ajzen, 1975), where several factors affect the behavioral intention. TRA was extended to predict users' intentions in different fields, and as a result, several new theories emerged. Accordingly, as a widely used theory in information systems (IS), TAM was proposed by Davis (1984). TAM has been applied to many IS fields such as business, e-commerce, e-government, e-marketing, e-learning, e-banking, online applications, knowledge management system, and online EG use, to name a few. Essentially, TAM postulates that perceived usefulness and perceived ease of use are the prominent factors that predict a user's behavioral intention. TAM factors and their relationships are illustrated in Figure 1.

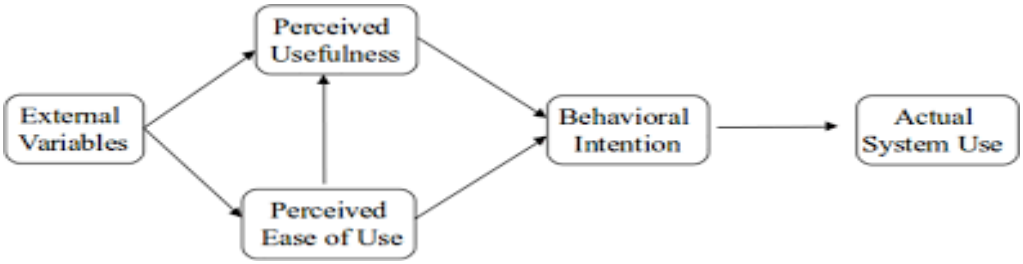

Figure 1: Technology Acceptance Model (TAM) (Davis, 1989)

Venkatesh et al. (2003) have empirically put forth an IS theory known as Unified Theory of Acceptance and Use of Technology (UTAUT). UTAUT possesses four direct determining factors: performance expectancy, social influence, effort expectancy, and facilitating conditions. It also has behavioral intention and uses behavior as a dependent variable. UTAUT theory also has four moderators: age, gender, the voluntariness of use and experience, and moderating relationships between dependent and independent variables. The details of the UTAUT theory are demonstrated in Figure 2.

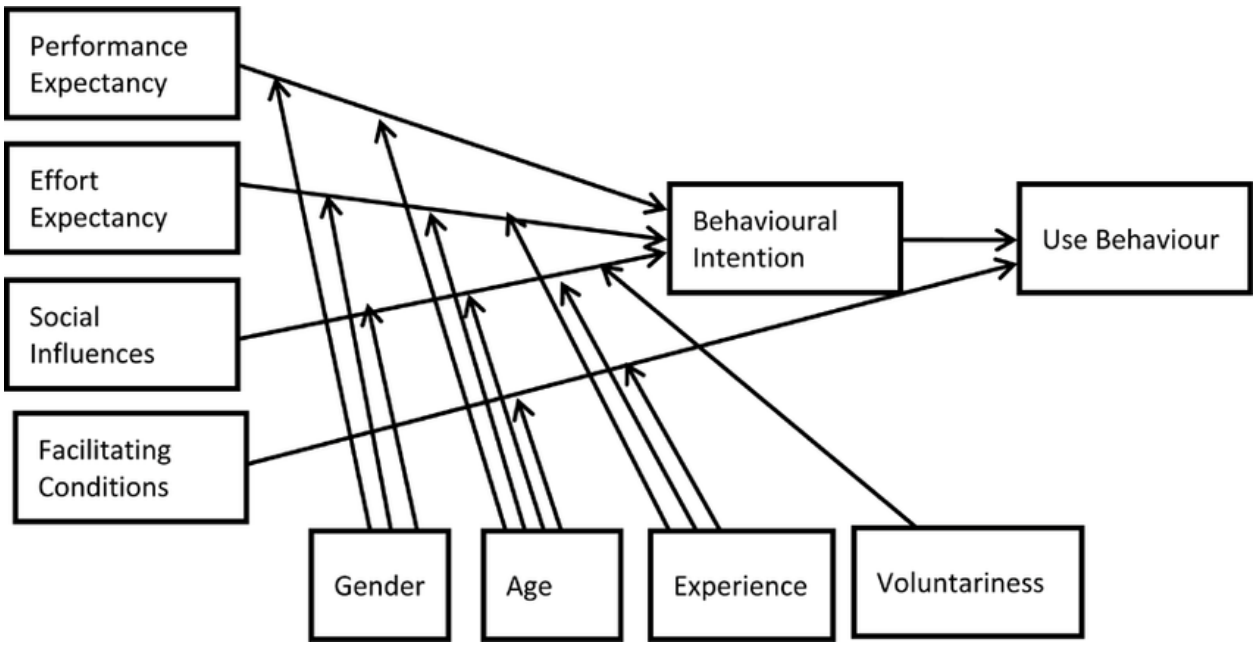

Figure 2: UTAUT Model (Venkatesh et al., 2003)

2.3 TAM and UTAUT and Educational Game Acceptance

TAM-based models have frequently been developed to predict and explain the acceptance of games in non-educational contexts. Several previous studies were conducted on the factors that affect the acceptance of entertainment games (Ha, Yoon, & Choi, 2007; Hsu & Lu, 2004). Hsu and Lu adopted TAM by incorporating flow experience and social norms, and their model accounted for 80% of the variance. They found that ease of use was the critical

factor of acceptance of the online game. Ha, et al. (2007) reported that perceived enjoyment predicted more effectively compared to usefulness.

In a study, Chen et al. (2017) found that social interaction, altruism, perceived enjoyment, perceived usefulness, ease of use, flow, attitude, use context, and behavior intention were significantly correlated in users' game acceptance. However, the relationships between perceived ease of use and usefulness and usefulness and attitude were not significant.

Hokroh and Green (2019) indicated that social norms, perceived enjoyment, and social interaction play a positive and significant role in influencing the perceived usefulness of online games for end users. Besides, price value, game quality, and internet speed are all factors that influence end-user perceived ease of use of online games. Both perceived ease of use and perceived usefulness significantly influence the attitude to use online games. Furthermore, perceived usefulness and attitude to use online games influenced the behavioral intention to use online games, impacting the actual use.

Based on an extensive review of literature, as discussed in the previous section, it is evidenced that studies on students' preferences for EG are still far from sufficient or even lacking (Bourgonjon et al., 2010; Camilleri & Camilleri, 2019). Little research on the determinant factors of EG has been reported, particularly in Malaysian and Indonesian university contexts. A small number of studies were conducted to accept familiar entertainment games, which could not be generalized to EG (Ibrahim et al., 2011, 2017). In the following section, the research hypotheses are formulated.

2.4 HYPOTHESES

The study formulates hypotheses and subsequently develops and assesses a model constructed by combining TAM and UTAUT theories.

Independent Variable: Performance Expectancy

Performance Expectancy (PE) is defined as the extent to which a person believes that utilizing an Information System (IS) will support him/her to obtain benefits in job performance (Wahab et al., 2011; Zainuddin and Rizman, 2017). PE covers the features of a prominent factor of TAM, i.e., usefulness. As indicated in Table 2, it comprises four items. Accordingly, games are utilized for educational reasons; thus, performance, as discussed here, is mainly for learning purposes. Nevertheless, Bourgonjon et al. (2010) contended that learning is beyond performance, which strongly depends on its process. Hence, the following hypothesis is proposed:

Table 2: Performance Expectancy (PE) Items

No.	Item
1	PE1: Using Online EG would improve my English learning performance.
2	PE2: Using Online EG would increase my English learning productivity.
3	PE3: Using Online EG would enhance my English learning effectiveness.
4	PE4: Using Online EG would help me to achieve better grades In the language learning course.

H1: Performance expectancy positively influences SP for online EGs.

Independent Variable: Learning Opportunity

Learning opportunities (LO) distinguishes between the process and product of two constructs. Incidentally, PE is associated with learning products, whereas LO is connected with the process. As shown in Table 3, LO encompasses seven items. LO is similar to usefulness in TAM as it deals with process to product (Bourgonjon et al., 2010). LO is defined as the degree to which a person believes that utilizing an online EG can provide him/her opportunities for learning. Hence, the following hypothesis is proposed:

Table 3: Learning opportunities (LO) Items

No.	Item
1	LO1: by Using online EG, I can experiment with English learning knowledge.
2	LO2: by Using online EG, I can take control over the language learning process.
3	LO3: by Using online EG, I can experience things I learned about.
4	LO4: by Using online EG, I can stimulate transfer between language skills.
5	LO5: by Using online EG, I can interact with other students in language learning.
6	LO6: by Using online EG, I can think critically in language learning.
7	LO7: by Using online EG, I can motivate other students in language learning.

H2: Learning opportunities positively influence SP for online EGs.

Independent Variable: Effort Expectancy

Another critical, independent variable is effort expectancy (EE). EE is defined as the extent to which the system is easy to use. This factor is similar to 'ease of use' in the TAM model. It comprises the second most significant construct in IS acceptance (Wahab et al., 2011; Zainuddin and Rizman, 2017). As illustrated in table 4, EE contains four items. Venketesh et al. (2003) have proposed EE based on the factors of TAM, MPCU, and IDT. Hence, the following hypothesis is postulated:

Table 4: Effort Expectancy (EE) Items

No.	Items
1	EE1: I would know how to handle online EGs in language learning.
2	EE2: It would be easy for me to use online EGs in language learning.
3	EE3: My interaction with online EGs for language learning would be clear and understandable.

H3: Effort expectancy (EE) positively influences SP for online EGs.

Independent Variables: Attitude (ATT)

Another independent construct is attitude (ATT). Attitude towards utilizing technology is associated with an individual behavior with affective reaction to system usage (Asiri, 2019; Padilla-MeléNdez et al., 2013; Seddon & Biasutti, 2009). Venkatesh et al. (2003) hold that attitude has been investigated in numerous studies. As shown in Table 5, ATT is composed of 4 items. Accordingly, Marchewka (2007) that attitude has a direct impact on behavioral intentions. The findings of previous studies have mixed results regarding its significance. Hence, the current study attempts to explore its effect on preferences. Hence, the following hypothesis is proposed:

Table 5: Attitude (ATT) Items

No.	Items
1	ATT1: Using online EGs would be a good idea for language learning.
2	ATT2: Learning with online EGs would be fun for language learning.
3	ATT3: Online EGs would make learning language learning more enjoyable.
4	ATT4: I think I will like language learning with online EGs.

H4: Attitude positively influences SP for online EGs.

Dependent variable: Students' Preference (SP) for EG

As the dependent variable, Students' Preference (SP) for EG is a crucial variable (Bourgonjon et al., 2010; Wahab et al., 2011). The present study is at the pre-implementation stage in which the existing system yet to be implemented. Consequently, the actual use of EG is complicated, if not impossible, in the context of Malaysian and Indonesian universities. Bourgonjon et al. (2010) argue that respondent behavioral intention (BI) is essential. They explain that BI could be an effective predictor of actual usage of the system. This study utilizes preference as the dependent variable that could be suitable in the pre-implementation stage of EG usage as recommended by Bourgonjon et al. (2010) and Ibrahim et al. (2011). This study

adopts students' preferences for technology which is associated with their acceptance of technology. As illustrated in Table 6, SP is constituted of three items.

Table 6: Students' Preferences (SP) Items

No.	Items
1	SP1: If I had the choice, I would choose to follow language learning courses in which online EGs are used.
2	SP2: If I had to vote, I would vote to use online EGs for language learning.
3	SP3: I am enthusiastic about using online EGs as one of my language learning approaches.

2.5 Proposed Research Model

Based on our hypotheses, we proposed the model of student's preferences for online educational games, as illustrated in Figure 3.

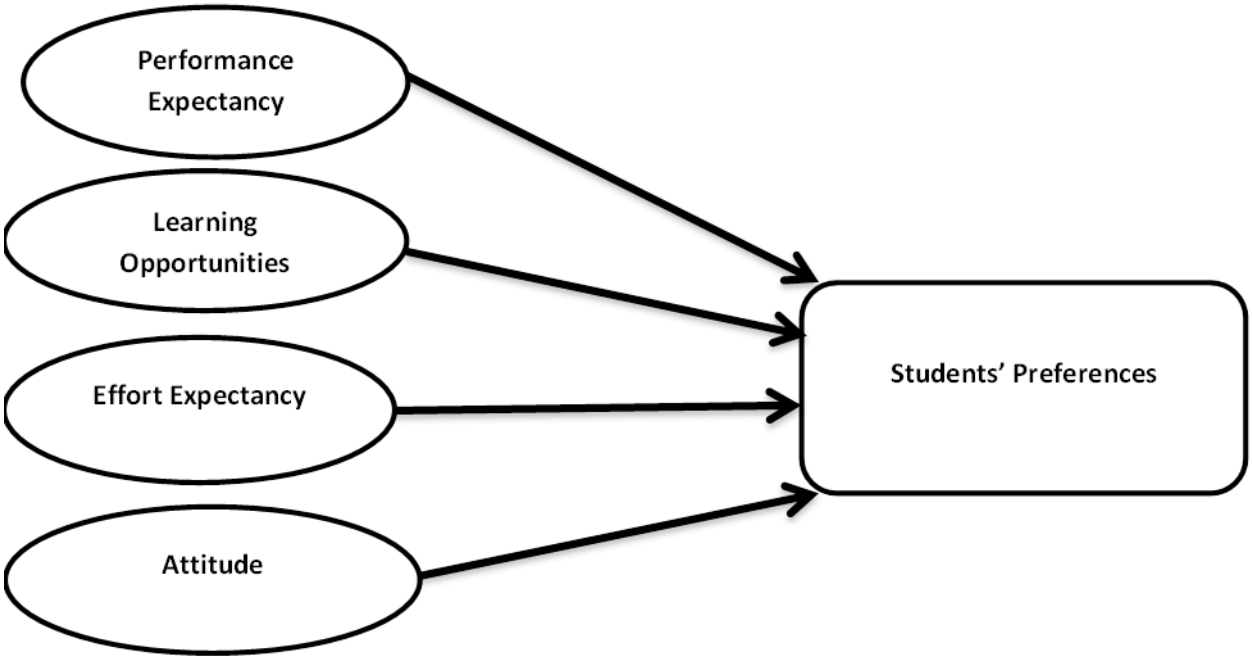

Figure 3: The proposed conceptual model for Educational game learning based on (Bourgonjon et al., 2010; Ibrahim et al., 2011; Wahab et al., 2011)

3. Methodology

The study assessed a technology acceptance model created by extending TAM and combining its elements with the UTAUT model by adopting a survey approach. The

questionnaire had 21 items and five option Lickert Scale (strongly disagree to agree strongly). The questionnaire items were adapted from (Asiri, 2019; Berns et al., 2016; Bourgonjon et al., 2010; Ibrahim et al., 2011; Wahab et al., 2011). The questionnaire was created using Google Forms. The link was sent to 322 Tertiary students in Malaysia and Indonesia to fill it online. From the sample of respondents, 230 students returned the questions, of which 163 responses were workable, and the response rate was around 51%. The obtained data were analyzed using SPSS version 26. The research runs descriptive statistics (mean and Std) and inferential statistics (correlation and regression).

3.1 Sampling Approach

The study sample was selected from the students studying in Malaysia, and Indonesian universities were selected randomly to represent the total number of students. The students' age ranged from 18 to 21. The study submitted the questionnaire links developed in Google Forms to 322 students who were randomly selected (Zikmund, 2002). However, the preliminary interview showed that they are familiar with online games in general and EGs in particular.

3.2 Research Procedure

The study first selected 322 students from the population of students in Malaysian and Indonesian universities. The link to the questionnaire developed via Google Forms was shared with the students. Two hundred thirty students returned the questionnaire, from which 163 responses were workable and were used for data analysis.

3.3 Techniques Of Analyzing Data

The study performed descriptive and inferential statistics. The descriptive analysis included mean and std, while the inferential statistics run correlation and regression using SPSS version 26.

4. Result

After collecting data through Google Forms, it was found that from the sample of 322 students, 163 responses were workable. This section presents the results of the data analysis. First, it deliberates on the reliability of constructs, demographics of participants, and subsequently, the findings of descriptive and inferential statistics are presented.

1) Reliability

a)Performance Expectancy

Table 7: Reliability Statistics

Cronbach's Alpha	N of Items
.852	4

In Table 7, data analysis indicates that the construct 'Performance Expectancy' (PE) with four items has Cronbach's Alpha values (.852). Hence, this means that this construct has a high level of reliability and internal consistency.

b) Learning Opportunities

Table 8: Reliability Statistics

Cronbach's Alpha	N of Items
.917	7

In Table 8, data analysis shows that the construct 'Learning Opportunities' (LO) with seven items has the Cronbach's Alpha values of (.917). This indicates that LO is a high level of reliability and internal consistency.

c) Effort Expectancy

Table 9: Reliability Statistics

Cronbach's Alpha	N of Items
.853	3

In table 9, data analysis indicates that the construct 'effort expectancy (EE) with three items has the Cronbach's Alpha value of (.853). This means that EE has a high level of reliability and internal consistency.

d) Attitude

Table 10: Reliability Statistics

Cronbach's Alpha	N of Items
.898	4

In Table 10, data analysis indicates that the construct ‘Attitude' (ATT) with four items has the Cronbach’s Alpha value (.898). Hence, ATT has a high level of reliability and internal consistency.

e) Students’ Preferences

Table 11: Reliability Statistics

Cronbach's Alpha	N of Items
.870	3

In Table 11, data analysis shows that the construct ‘Preferences’ (Pre) has the Cronbach’s Alpha value of (.870). Hence, Pre has a high level of reliability and internal consistency.

2)Demographics

a) Faculty

Table 12: Faculty

	Frequency	Percent	Valid Percent	Cumulative Percent
Faculty of Management	83	50.9	50.9	50.9
Faculty of Creative art & human development	72	44.2	44.2	95.1
Center for Professional & General Studies	8	4.9	4.9	100.0
Total	163	100.0	100.0	

As indicated in Table 12, in total, 163 students participated in the current study who were from the Faculty Of Management (83, 50.9%), Faculty Of Creative Art& Human Development (72, 44.2%), and Center For Profesional & General Studies (8,4.9%). It is seen

that the majority of the respondents are from the Faculty Of Management, where the least number of participants belongs to the Center For Profesional & General Studies.

b) Place

Table 13: Place

	Frequency	Percent	Valid Percent	Cumulative Percent
On-Campus/ hostel	139	85.3	85.3	85.3
Off-Campus	24	14.7	14.7	100.0
Total	163	100.0	100.0	

As illustrated in Table 13, 163 students took part in the study who live on-campus/hostel (139, 85.3%) and off-campus (24, 14.7%). It is seen that most of the students live at hostels on campuses.

d) Gender

Table 14: Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	16	9.8	9.8	9.8
Female	147	90.2	90.2	100.0
Total	163	100.0	100.0	

As indicated in Table 14, 163 students participated in the present study, from whom 147 (90.2%) students are females, while 16 (9.8%) participants are males. This is typical as girls outnumber boys in most fields of studies.

3) Descriptive analysis

Table 15: Descriptive Statistics

Items	Mean	**Std.**
PE1: PE1: Using Online EG would improve my English performance.	4.05	**.667**
PE2: Using Online EG would increase my English learning productivity.	4.01	**.752**
PE3: Using Online EG would enhance my English learning effectiveness.	3.89	**.705**
PE4: Using Online EG would help me to achieve better grades in the English course.	3.93	**.755**
LO1: by Using online EG, I can experiment with English language knowledge.	4.08	**.687**
LO2: by Using online EG, I can take control over the language learning process.	3.90	**.739**
LO3: by Using online EG, I can experience things I learned about in language class.	3.98	**.664**
LO4: by Using online EG, I can stimulate transfer between language skills	3.89	**.696**
LO5: by Using online EG, I can interact with four students	3.91	**.775**
LO6: by Using online EG, I can think critically in language learning.	3.79	**.732**
LO7: by Using online EG, I can motivate other students in language learning.	3.79	**.773**
EE1: I would know how to handle online EG for language learning.	3.81	**.750**
EE2: It would be easy for me to use online EG	3.87	**.747**
EE3: My interaction with online EG in language learning would be clear and understandable	3.76	**.712**
ATT1: Using online EG would be a good idea for language learning.	4.00	**.748**
ATT2: Language learning with online EG would be fun.	4.13	**.679**
ATT3: Online EG would make language learning more enjoyable.	4.12	**.656**

ATT4: I think I will like language learning with online EG.	4.00	**.707**
SP: If I had the choice, I would choose to follow language courses in which online EG is used.	3.85	**.736**
SP: If I had to vote, I would vote to use online EG for language learning.	3.82	**.787**
SP: I am enthusiastic about using online EG as one of my language learning approaches	3.80	**.676**

As illustrated in Table 15, the mean values and Std of the items of five constructs, namely Performance Expectancy (PE), Learning Opportunities (LO), Effort Expectancy (EE), Attitude (ATT), and Preferences (Prf), are provided. Regarding PE, 'using online EG to improve language learning performance' has the highest mean value (mean=4.05, std=.667), followed by 'using online EG to increase language learning productivity' (4.01, .752), 'using Online EG to achieve better grades in language course' (3.93, .755), and 'using online EG to enhance language learning effectiveness' (3.89, .755).

About LO, the highest mean score belongs to 'using online EG to experiment with English language knowledge' (4.08, 687), followed by using online EG, 'experiencing things to learn about in language learning (3.98, .664), 'using online EG to interact with other students in language learning (3.91, .775), 'using online EG to take control over the language learning process (3.90, .739), 'using online EG to stimulate transfer between language skills' (3.89, .789),' using online EG to think critically in language learning (3.79, .732), and 'using online EG to motivate other students to learn the language' (3.79, .773).

Regarding EE, the highest mean value belongs to the item 'being easy to use online EG for language learning' (mean=3.87, std=.747), followed by 'to know how to handle online EG in language learning (3.81, .750), and 'interaction with online EG, in language learning, would be clear and understandable' (3.76, .712).

Concerning ATT, the highest mean score is related to the item 'language learning with online EG would be fun (4.13, .679), followed by 'online EG would make language learning more interesting' (4.12, .656), 'using online EG would be a good idea for language learning (4, .748), and 'interested in language learning with online EG' (4, .707).

Concerning SP, the highest mean score belongs to 'having the choice to choose to follow language learning courses in which online EG are used' (3.85, .736), followed by 'voting in favor of using online EG for language learning (3.82,.787), and 'being enthusiastic about using online EG as one of my language learning approach' (3.80, .676).

4) Inferential Statistics: Regression

Table 16: Descriptive Statistics

	Mean	Std. Deviation
SP	3.8148	.74118
PE	3.9907	.68132
LO	3.9753	.64942
EE	3.8457	.67402
ATT	4.0833	.61616

In Table 16, the overall mean values and std of the constructs are given. ATT (4.08, .616), PE (3.99, .681), LO (3.97, .649), EE(3.84,674), and SP (3.81, .741). The greatest mean value belongs to attitude (ATT), while SP has the least mean score.

Table 17: Correlations

		PE	LO	EE	ATT	SP
PE	Pearson Correlation	1	.659**	.660**	.679**	.446**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	163	163	163	163	162
LO	Pearson Correlation	.659**	1	.658**	.665**	.532**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	163	163	163	163	162
EE	Pearson Correlation	.660**	.658**	1	.659**	.527**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	163	163	163	163	162
ATT	Pearson Correlation	.679**	.665**	.659**	1	.578**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	163	163	163	163	162
SP	Pearson Correlation	.446**	.532**	.527**	.578**	1
	Sig. (2-tailed)	.000	.000	.000	.000	

N	162	162	162	162	162

**. Correlation is significant at the 0.01 level (2-tailed).

As shown in Table 18, the analysis of correlations between variables indicates that all variables (PR& PE, SP & LO, PR & EE, SP & ATT are significantly positively correlated where the most substantial coloration exists between PE and ATT (.679), followed by correlations between ATT and LO, PE and EE, LO and EE (.665, 660, .658, respectively).

Table 18: Variables Entered/Removed

Model	Variables Entered	Variables Removed	Method
1	ATT, EE, LO, SP[b]	0	Enter

a. Dependent Variable: SP

b. All requested variables entered.

Table 19: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.625[a]	.391	.375	.58576	.391	25.192	4	157	.000

a. Predictors: (Constant), ATT, EE, LO, PE

As indicated in Table 19, the R square is .391. It means that the independent variables in the model account for 39% of changes in the dependent variable.

Table 20: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.

1	Regression	34.575	4	8.644	25.192	.000[b]
	Residual	53.870	157	.343		
	Total	88.444	161			

a. Dependent Variable: SP

b. Predictors: (Constant), ATT, EE, LO, PE

As illustrated in Table 20, the sig. Value is .000; hence the independent variables predict the changes in the dependable variable.

Table 21: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.573	.332		1.725	.086
	PE	-.066	.104	-.060	-.633	.527
	LO	.239	.107	.210	2.228	.027
	EE	.219	.103	.199	2.123	.035
	ATT	.419	.115	.349	3.637	.000

a. Dependent Variable: SP

4.1 Hypotheses Testing

This section deliberates on the hypotheses testing based on the findings of regression analysis. The research hypotheses are tested based on sig. Significance values subsequently, as given in Table 21.

H1: Performance expectancy (PE) positively affects students' preferences (SP) for online EGs in language learning courses.

Data analysis reveals that there is no strong relationship between PE and SP (β=.060, P=527). The findings show that the sig. Value is .527, which is greater than .05. This means that PE is not a strong predictor of SP. Hence, this hypothesis is rejected. Consequently, this factor cannot be a part of the structural model.

H2: Learning opportunities (LO) positively affect students' preferences (SP) for online EGs in language learning courses.

Data analysis indicates strong positive relationships between LO and SP (β= .210, P=.027). It is shown that LO sig. Value is .027, which is less than .05. This means that LO strongly affects SP and predicts the changes in SP. Hence, this hypothesis is accepted, and LO comprises one of the main factors of the structural model.

H3: Effort expectancy (EE) positively affects Students' Preferences (SP) for online EG in language learning courses.

The findings also show strong positive relationships between EE and SP (β=.199, P= .035). This shows that the sig. Value is .035, which is less than .05. Hence, this hypothesis is accepted, and Effort Expectancy is a strong predictor of the changes in SP. This factor is one of the main variables of the structural model.

H4: Attitude (ATT) positively affects Students' Preferences (SP) for online EG in language learning courses.

Data analysis shows that there are strong positive relationships between ATT and SP (β= .349, P=.000). This indicates that attitude towards technology has sig. Value of .000. Hence, this hypothesis is accepted, and Attitude is a strong predictor of the changes in SP. Thus, attitude is another central pillar of the structural model. The structural model is shown in Figure 2.

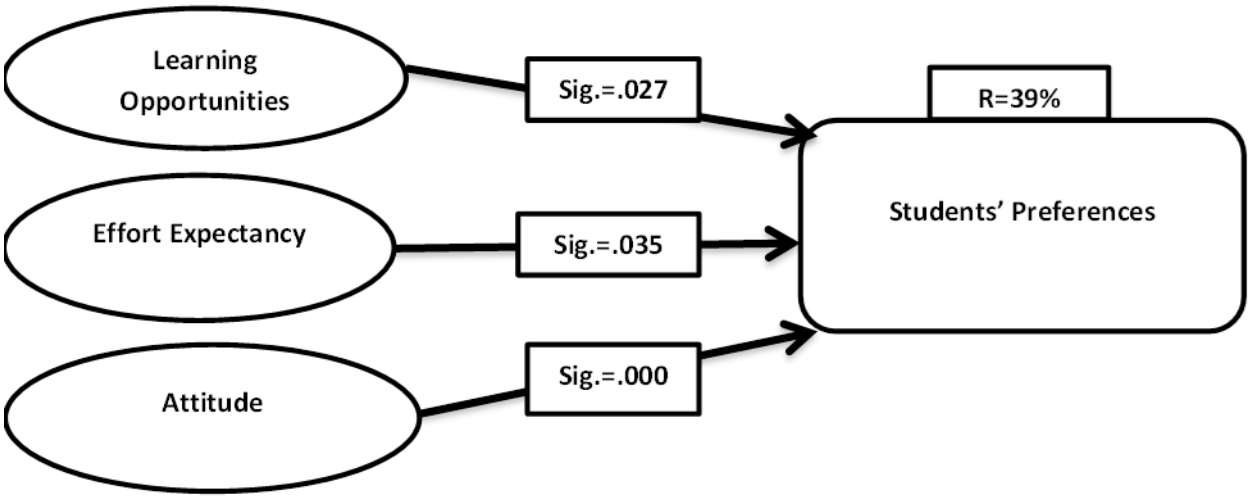

Figure 4: The Structural Model

5. Discussion

Firstly, the study's findings support the use of TAM in the context of online EG, as three variables embedded in the model, namely Learning Opportunities, Effort Expectancy, and Attitudes, are strong predictors of Students' Preferences in a language learning course. The current study found that three factors, namely, LO, EE, and ATT are significant determiners of students' preference (SP) to use EG in language learning courses. The model explains 39% of the variance in SP. However, the construct 'performance expectancy' (PE) was not a significant predictor of SP. The justification might be that most of the students have not used EG in their learning attentively, or even some have not employed it yet, and consequently, performance expectancy could not impact their acceptance of EG. In a study by Ibrahim et al. (2011), they reported that only LO and ATT are significant determinants of preferences, while the current study found that EE, LO, and ATT were significantly functional constructs of the model.

LO was found to be a significant factor in students' preferences. This allows students to experiment with knowledge, take control over the language learning process, experience things they learn about in language learning, be motivated to use EG (Eseryel et al., 2014), transfer language skills, interact with others think critically while learning the language. The explanation might be that students are aware of the learning opportunities provided by EG as they are exposed to online games and EGs in particular (Bourgonjon et al., 2010; Ibrahim et al., 2011).

EE also strongly significantly explains the variance in SP. This enables students to learn how to handle online EG for language learning, learn how to use online EG effortlessly, have clear and understandable interaction online EG in the language learning process. This finding contradicts previous literature on acceptance of EG in the Malaysian university context (Ibrahim et al., 2011; Ibrahim et al., 2017). The justification might be that students are well-informed regarding their efforts to apply EG in their learning. Another explanation may be that UCYP students have more exposure to EGs than their fellow students who participated in the study by Ibrahim et al. (2011).

According to a positive attitude towards using EG, students believe that using online EG would be a good idea for language learning, language learning with online EG would be fun, online EG would make language learning more interesting, and students would be keen on sing online EGs for language learning (Ibrahim et al., 2011; Ibrahim et al., 2017; Martí-Parreño et al., 2018; Padilla-MeléNdez et al., 2013; Sivo et al., 2018). Students' positive attitudes towards online EG are rewarding and might accelerate their use of EG for language learning.

Students' preferences indicate that they would choose to follow language courses in which online EG are used, and they would support using online EG for language learning as they are enthusiastic about using online EG as a new language learning approach. However, students' preference for EG is not sufficient and should not be taken for granted though it offers insights into enhancing it. Teachers should adopt EG as a novel approach to supplement language learning and assist students in using EG.

6. Implications

The current study developed an EG model by extending TAM and UTAUT and tested it in a survey study. It has both theoretical and practical implications.

7. Theoretical implications

The current study's finding has theoretical implications as it adds to the body of knowledge regarding students' preferences for online EG in language learning courses. It was found that the constructs PE, LO, EE, and ATT are strong determinants of SP for language learning. It was revealed that EE significantly predicts SP, while in a previous study, EE was not an influential factor of SP. Further, an extension of TAM can explain and predict the variance in students' preference for online educational games.

8. Practical implications

The finding of the present study has practical implications for instructors, students, and EG designers. Language teachers can benefit from the result of the study by raising their awareness regarding students' attitudes towards online EG and their acceptance of EG. Teachers may adopt online EG as a new approach to language teaching and learning. Students might build an understanding of the benefits of using EG, as a new approach, for enhancing language learning individually or collaboratively. EG designers or app developers may deepen their understanding of different aspects of EGs and students' preferences for using EG as a new approach to language learning. They might use the finding of this study to upgrade or modify the design and content of the educational games to make them more appealing and functional for language learning.

9. Conclusion

The current study examined students' preferences for online EG by proposing and assessing

a model based on TAM and UTAUT. The research conducted a survey study involving 322 students studying diplomas at UCYP using an online questionnaire, through Google Forms, for data indication. The obtained data were analyzed using SPSS version 23. The findings of the study indicates that the variables 'learning opportunities'(LR), 'effort expectancy(EE), and "attitude" (ATT) significantly, strongly predict the changes in the dependable variable 'students' preferences'(SP); however, the variable 'performance expectancy'(PE) has no significant effect on SP in language learning course. The students showed interest in using online EG for language learning as a new approach with fun. They also appreciated the language learning opportunities provided by EG. They also indicated that they have the skills for using EG for language learning.

The justification might be because they are digital natives and already use games for entertainment. Encouragingly, they had positive attitudes towards using games for language learning. Overall, they show a preference for using online EGs for language learning. Instructors, stakeholders should leverage students' knowledge, skills, and competencies, and university admins to step up the application of EG in language learning courses and enhance education quality.

However, the study has some limitations. In terms of sampling, the study might have involved more students in making the findings more valid and generalizable. The study only focused on four determinants of SP, namely PE, LO, EE, and ATT, and more constructs may help explore more aspects of SP. A study with an experimental design might be interesting to look at the real effects of online ads on students' learning. Future studies may involve teachers, instructors, parents, school managers, or policymakers to build a more profound understanding of EG's implementation. As the current study focused on SP and indicated students' acceptance of EG, a follow-up study might investigate students' use of online EG in learning specific subjects. Bearing these in mind, we should be cautious in generalizing the current study's findings to the target population, and the findings ought to be translated and interpreted in light of the limitations of the study. Hopefully, the present study sheds some light on the use of online EG in terms of SP in English language learning in Malaysian universities. It might also provide some valuable information for online EG designers and developers for language teaching and learning.

References

Alharbi, L. (2020) " The Effectiveness of Using Interactive Technology and Video Games on Developing English as a Foreign Language among Saudi Students in Qassim Region. *Arab Journal for Scientific Publishing (AJSP) ISSN, 2663, 5798.*

Alharthi, S. (2020) Assessing Kahoot's Impact on EFL Students' Learning Outcomes. *Arab Journal for Scientific Publishing (AJSP) ISSN, 2663, 5798.*

Asiri, M. J. (2019). Do Teachers' Attitudes, Perception of Usefulness, and Perceived Social Influences Predict Their Behavioral Intentions to Use Gamification in EFL Classrooms? Evidence from the Middle East. *International Journal of Education and Practice, 7(3), 112-122.*

Berns, A., Isla-Montes, J. L., Palomo-Duarte, M., & Dodero, J. M. (2016). Motivation, students' needs, and learning outcomes: A hybrid game-based app for enhanced language learning. *Springer Plus, 5(1), 1305.*

Blume, C. (2020). Games people (don't) play: An analysis of pre-service EFL teachers' behaviors and beliefs regarding digital game-based language learning. *Computer Assisted Language Learning, 33(1-2), 109-132.*

Bourgonjon, J., et al. (2010), *Students' perceptions about the use of video games in the classroom. Computers and Education, 2010. 54, 1145-1156.*

Camilleri, A., & Camilleri, M. A. (2019). The Students' Perceived Use, Ease of Use and Enjoyment of Educational Games at Home and at School. In Camilleri, AC & Camilleri, MA (2019). The Students' Perceived Use, Ease of Use and Enjoyment of Educational Games at Home and School. *13th Annual International Technology, Education and Development Conference. Valencia, Spain (March 2019). International Academy of Technology, Education and D.*

Chen, H., Rong, W., Ma, X., Qu, Y., & Xiong, Z. (2017). An extended technology acceptance model for mobile social gaming service popularity analysis. *Mobile Information Systems, 2017.*

Cheng, Y. M., Lou, S. J., Kuo, S. H., & Shih, R. C. (2013). Investigating elementary school students' technology acceptance by applying digital game-based learning to environmental education. *Australasian Journal of Educational Technology, 29(1).*

Davis, F.D., Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 1989. 13(Sep 1989), 319-340*

Eseryel, D., Law, V., Ifenthaler, D., Ge, X., & Miller, R. (2014). An investigation of the interrelationships between motivation, engagement, and complex problem solving in

game-based learning. *Journal of Educational Technology & Society, 17(1), 42-53.*

Dehghanzadeh, H., Fardanesh, H., Hatami, J., Talaee, E., & Noroozi, O. (2019). Using gamification to support learning English as a second language: a systematic review. *Computer Assisted Language Learning, 1-24.*

Fishbein, M., & Ajzen, I. (1975). Belief, attitude, intention, and behavior: An introduction to theory and research. Reading, MA: Addison-Wesley.

Franciosi, S. J. (2017). The effect of computer game-based learning on FL vocabulary transferability. *Journal of Educational Technology & Society, 20(1), 123-133.*

Gamlo, N. (2019). The Impact of Mobile Game-Based Language Learning Apps on EFL Learners' Motivation. *English Language Teaching, 12(4), 49-56.*

Ha, I., Y. Yoon, and M. Choi, Determinants of adoption of mobile games under mobile broadband wireless access environment. *Information and Management, 2007. 44(2007), 276 - 286.*

Hokroh, M., & Green, G. (2019). Online Video Games Adoption: Toward an Online Game Adoption Model. *International Journal of Research in Business and Social Science (2147-4478), 8(4), 163-171.*

Hsu, C.-L. and H.-P. Lu, Why do people play online games? An extended TAM with social influences and flow experience. *Information and Management, 2004. 41(2004), 853-868.*

Hung, H. T., Chang, J. L., & Yeh, H. C. (2016, July). A review of trends in digital game-based language learning research. *In 2016 IEEE 16th International Conference on Advanced Learning Technologies (ICALT), 508-512*

Huang, Y. M. (2019). Exploring students' acceptance of educational computer games from the perspective of learning strategy. *Australasian Journal of Educational Technology, 35(3).*

Ibrahim, R., Wahab, S., Yusoff, R. C. M., Khalil, K., Desaru, I. N. S. T. E. D. T., & Jaafar, A. (2011). Student perceptions of educational games in higher education: An empirical study. *Issues in Information Systems, 12(1), 120-133.*

Ibrahim, R., Masrom, S., Yusoff, R. C. M., Zainuddin, N. M. M., & Rizman, Z. I. (2017). Student acceptance of educational games in higher education. *Journal of Fundamental and Applied Sciences, 9(3S), 809-829.*

Kijpoonphol, W., & Phumchanin, W. (2018). A Comparison between Traditional and Gamified Teaching Methods for Phrasal Verb: A Case of Grade 10 Students. *TESOL Internationa Journal, 13(3), 56-65.*

Lin, H. C., Chiu, Y. H., Chen, Y. J., Wuang, Y. P., Chen, C. P., Wang, C. C., ... & Ho, W. H. (2017). Continued use of an interactive computer game-based visual perception learning

system in children with developmental delay. International journal of medical informatics, 107, 76-87.

Lin, C. J., Hwang, G. J., Fu, Q. K., & Chen, J. F. (2018). A flipped contextual game-based learning approach to enhancing EFL students' English business writing performance and reflective behaviors. *Journal of Educational Technology & Society, 21(3), 117-131.*

Marchewka, J.T., C. Liu, and K. Kostiwa,(2007) *An Application of the UTAUT Model for Understanding StudentPerceptions Using Course Management Software. Communications of the IIMA, 2007. 7(2), 93 - 104.*

Martí-Parreño, J., Galbis-Córdova, A., & Miquel-Romero, M. J. (2018). Students' attitude towards the use of educational video games to develop competencies. *Computers in Human Behavior, 81, 366-377.*

Padilla-MeléNdez, A., Del Aguila-Obra, A. R., & Garrido-Moreno, A. (2013). Perceived playfulness, gender differences, and technology acceptance model in a blended learning scenario. *Computers & Education, 63, 306-317.*

Pardoel, B. (2018). Gamification and its potential for foreign language learning lessons from a six-week gamified Moodle course for german as a foreign language at secondary school level.

Rahardja, U., Hariguna, T., & Aini, Q. (2019). Understanding the Impact of Determinants in Game Learning Acceptance: An Empirical Study. *International Journal of Education and Practice, 7(3), 136-145.*

Sivo, S. A., Ku, C. H., & Acharya, P. (2018). Understanding how university student perceptions of resources affect technology acceptance in online learning courses. *Australasian Journal of Educational Technology, 34(4).*

Susanta, I. P. A. E., & Pradnyana, I. G. G. S. The Use of English Language Functions for Midwifery Education. Index, 26.

Usai, F., O'Neil, K. G., & Newman, A. J. (2017). Design and empirical validation of the effectiveness of LANGA, an online game-based platform for second language learning. *IEEE Transactions on Learning Technologies, 11(1), 107-114.*

Venkatesh, V., et al.(2003), User acceptance of information technology: Toward a unified view. *MIS Quarterly, 27(3), 423 – 478.*

Watson, W. (2007). Formative research on an instructional design theory for educational video games. *Unpublished doctoral dissertation, Indiana University.*

Yukselturk, E., Altıok, S., & Başer, Z. (2018). Using game-based learning with Kinect technology in foreign language education course. *Journal of Educational Technology &*

Society, 21(3), 159-173.

Zikmund (2002). Business research methods, Dryden, Thomson Learning.

The Impact of Learning Styles on Tertiary Students' English Language Acquisition

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Abstract

The study aims to determine whether different learning affects the acquisition of the English language amongst tertiary students. In this study, the questionnaire model that has been selected for use is the VARK© questionnaire (the acronym VARK stands for Visual, Aural, Read/Write, and Kinesthetic sensory models used for information learning). The VARK model is termed by Fleming and Mills (1992). The sampling used in this particular study would be first-year diploma students from the University College of Yayasan Pahang. They are asked to complete the VARK© questionnaire at the beginning of the study, and the results from that questionnaire will then be analyzed via SPSS. In addition, the study will also look into the final results of the students' English examination results to decipher whether the different learning styles correlate with the scores that the students obtained during the entire session of the course. Based on the data collected, it can be concluded that students who are more inclined towards the reading/ writing style of learning were able to score higher than the other learning styles. In conclusion, with the data that has been collected, it is hoped that it will be a help to educators in tertiary

education in the future.

Keywords*: VARK© model, Learning Styles, Tertiary Students, Language Acquisition*

1. Introduction

1.1 Introduction to English

The English language has a history that spans 1,400 years. According to Encyclopedia Britannica, it is a language that starts with the invasion of Britain during the 5th century. The three main contributors to the birth of the English language were the Jutes, Saxons, and Angles that were seeking new land and therefore ventured into the North Sea (Calvo, 2020). ThroughThroughout the entire age of the English language, it can be separated into three categories: Old English, Middle English, and Modern English.

Furthermore, English is a language dominantly used in the United Kingdom, the United States, Canada, Australia, Ireland, New Zealand, and the different island nations in the Caribbean Sea and the Pacific Ocean. The English language is also used as an official language in India, the Philipines, including the many countries in the African continent, including South Africa. The English language is the go-to language as a foreign language in most other countries globally, and this has established itself as the global lingua franca. (Crystal, 2020) English language users in the world are estimated to number around two billion persons at this current time. With a language with such a prestigious status, learners and educators must understand and learn how to master the language effectively.

When it comes to language learning, it is an active process that begins at birth and continues in life. People learn a language because they need it to communicate their thoughts, feelings, and experience, communicate and forge relationships with family members and friends, or make sense of how the world works. The English language study requires these four skills of listening, speaking, reading, and writing.

1.2 Listening and Speaking

The foundation of literacy comes first and foremost from oral language. Through listening and speaking, individuals can communicate their thoughts and feelings, experience, and information and learn to understand others and themselves.

By listening and speaking, it enables students to communicate effectively with the people around them. In order to be a successful learner of any language, a learner needs to be able to

develop fluency and competency in their oral language capabilities. The many opportunities to communicate both from a formal or informal context will benefit them,

1.3 Reading and Writing

Both the skills above are means of communication and learning that are very powerful. They help learners extend their knowledge and use of a language, helps students to create their own identity, and also helps students' relaxation and enjoyment.

When reading, a learner can access many different ideas, views, and experiences of other people around them. Reading effectively using different skills and strategies allows students to develop thoughtful or critical interpretations across different forms of written media, be it fiction or non-fiction. Writing will help students explore, shape, and clarify their thoughts and be able to communicate with others about them. Utilizing effective writing strategies will allow learners to discover and refine ideas and proofread and make necessary changes in their writing confidently and skillfully.

In the context within the University College of Yayasan Pahang, the researcher is trying to look into the correlation between learning styles and language acquisition plays a part in the students' success in their English competency. One major issue when it comes to the acquisition of the English Language for students of UCYP is the fact that English is not the student's first language, and therefore this researcher believes that this will be one of the impeding factors, which will cause students to have difficulties in mastering the English language.

The objective of this study was to find out whether there is a link between the learning styles and the achievement of diploma students of UCYP in their mastery of the English language. The study will also answer these few research questions:

1. What are the learning styles that the diploma students of UCYP use?
2. What is the predominant learning style among the diploma students of UCYP?
3. Which learning style achieved the highest score in English amongst the diploma students of UCYP?

1.4 The VARK inventory

The VARK inventory is derived from a 1992 study carried out by Neil D. Fleming and Coleen E. Mills, which states four modalities of student learning. The different learning styles were identified after the researchers spend thousands of hours in-classroom observation. VARK (an acronym for Visual, Aural, Read/Write, and Kinesthetic, different learning styles) is a learning inventory categorized into the 'instructional preference' modal. (Marcy, 2001) As covered in the section above, the visual learners, the aural learners, and the kinesthetic learners.

Added into this group of learners are the (R) learners who benefit the most from the written word. They like to read the text and take notes verbatim and reread these over and over again. (Khanal et al., 2014). The development of the VARK inventory was an effort to improve faculty development and help with the betterment of student learning. Research has shown that students' learning styles and approaches to study may significantly bear on their academic success. (Newble & Gordon, 1985). Figure 1 further illustrates the VARK learning styles and the subcategories associated with each different learning style.

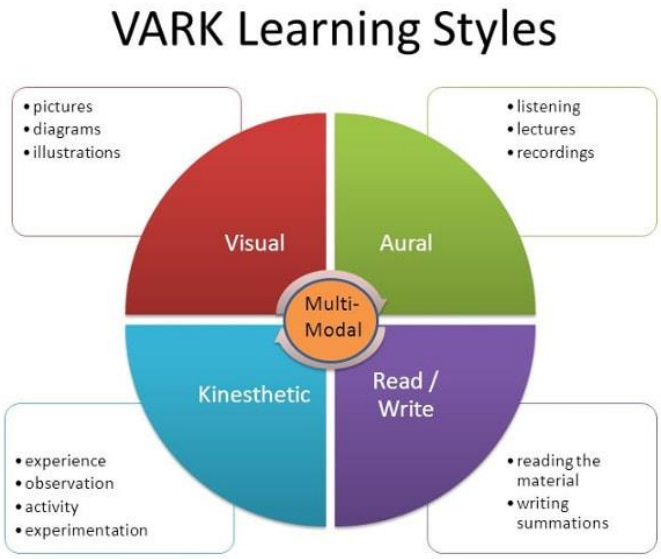

Figure 1. VARK Learning Styles

This paper seeks to determine the correlation between the students' learning styles and their understanding of the English language using the VARK inventory. It is with the hope that by understanding which learning styles suit the student best, the educators will be able to cater to the needs of the students and help with the betterment of their English language capabilities.

2. Literature Review

Second language acquisition, otherwise known as SLA, focuses on the study of English achievement of the diploma students of UCYP. The researcher will be focusing on explicit learning. According to Hulstjin (2005):

> Explicit learning is input processing with the conscious intention to find out whether the input information contains regularities and, if so, to work out the concepts and rules with which these regularities can be captured.

With this statement alone, we can understand that the learning and acquisition of the English language among the diploma students here in UCYP is not something that they are instilled with but requires active participation and is an ongoing process.

In the acquisition of a second language, in this case, being English. There have been many hypotheses that have been provided by Krashen (1988), one of the hypotheses that this researcher will like to bring to the attention is the **Acquisition-Learning** hypothesis. This hypothesis is one of the fundamental hypotheses that Krashen provides in his theory of second language acquisition. In this hypothesis, there is a distinction shown between acquiring a language and learning about a language. The '**acquisition**' system refers more towards a process where like children learning their first language, the process is subconscious and requires the person to have meaningful conversations within the target language. The focus is communicating instead of looking at the rules of the language.

In '**learning**,' the language is taught in the form of guided instructions, and it requires the students to consciously process information and have a thorough knowledge of the language they are learning in order to master the language fully, for example, the understanding of the grammatical rules of the language.

In learning about a new language or a new subject, one needs to understand the preferred learning style. Learning styles is a term used to refer to how a learner gathers, processes interprets, organizes, and thinks about the information. Students have different learning styles, which is the reason for the diversity seen in classrooms regarding how students acquire information. (Khanal et al., 2014). When speaking about learning styles, it is not in itself ability but rather a preferred way of using one's abilities (Sternberg, 1994; Sheu et al., 2013). According to O'Malley et al. (1985), learning styles can be taught. There have different terms that have been adopted into literature, such as learning style, sensory preference, types of personality, and cognitive style. Some of these terms, in some instances, have been used interchangeably, while in other occasions, they are differentiated (Cassidy, 2004). This paper focuses on the sensory learning styles, including visual, tactile/kinesthetic, and auditory—(Dornyei,2005; Oxford,2003), which will be explained in the following section.

2.1. Visual versus verbal

In visual learners, the individual prefers to think in pictures and obtain information through visual means such as presentation slides, diagrams, and videos. Visual learners have a keen eye and are taking it all in. (Weichel, 2016). On the other spectrum, verbal learners tend to understand through verbal explanation, which can either be spoken or written.

2.2. Auditory learners

This form of learning style is focused on the learner's sense of hearing. In short, the learner can remember or understand a concept through auditory representation. The auditory learner is typically a good listener who can pick things up when they hear them and benefits from hearing lectures, podcasts, brainstorming, and participating in discussions (Weichel, 2018)

2.3. Kinesthetic learners

The kinesthetic learning style is another specific learning style. A kinesthetic can process information more effectively by doing instead of listening or reading. The characteristics of kinesthetic learners are that they need a multi-sensory learning environment for deep learning as they learn through 'doing' (Macmillan, 2018). A study done on Malaysian university students by Muniandy (2013) found out that Malay students prefer kinesthetic learning style while Chinese students prefer auditory learning styles

To date, there have been numerous researches that have been carried out with relations to the learning styles of students and how it is connected to their academic achievements. The research that was carried seeks to find some of the more preferred learning styles of a group and how it can help educators pinpoint and decide curriculums much more suited to their learners.

In one research carried out by Widharyanto and Binawan (2020), several 175 participants from different ethnic groups such as the Java, Papua, Flores, Dayak, and Batak were given a VARK questionnaire Fleming and a language learning strategy questionnaire from Oxford. The results of the two questionnaires were analyzed to determine the type of learning style and language learning strategy. The first finding suggests that the main learning styles of students from the five ethnicities are variants [aural] and [kinesthetic], including variations in bimodal and trimodal. The second finding shows that the major language learning strategy is metacognitive and affective. The third finding reveals some similarities and unique differences in their learning style and learning strategies. (Widharyanto & Binawan, 2020, p. 486)

In another research by Moayyeri (2015, p. 132), the goal was to determine the impact of the undergraduate students learning preference via the VARK model on their language achievement. A total of 360 students from different science studies (life, humanities, basic science, engineering) were selected from The State University, Islamic Azad University, Farhangiyan University, Payamenoor University, and Medical University of Sistan and Baluchestan province in Iran. Once the students were selected, the students were given a standard proficiency test and the VARK questionnaire. Upon analyzing the test scores, the

reading style was the dominant style of learning among Iranian EFL learners, and there is a strong correlation between the students' field of study and their learning styles. Also, students with reading styles have the highest language achievement, and the students with visual personality type have the lowest performance. (Moayyeri, 2015)

Another related research regarding the VARK modal and the English language learning was carried out by (Hadriana et al., 2019, p. 340) in Universitas Riau, Indonesia. The researchers wanted to determine if there is a connection between learning styles and the student's achievement of the English language. Three hundred students were involved in this research, and the results were collected based on the VARK questionnaire and the students' English grades. Based on the findings, the researchers concluded that there is a close relationship between the students' learning styles and their English language competency.

As shown in the research above, there is a strong connection between the language achievements of the learners with their learning styles. In the first research by Widharyanto & Binawan (2020), it can be seen that learners benefit more from the aural and kinesthetic learning styles. In the research carried out by Moayyeri (2015), we can see that the reading style of learning has a dominant place in the students' learning of a new language.

3. Research Methodology

3.1. Participants

When looking into this research, the probability sampling might have been more effective; however, to access the whole population in all the universities in Kuantan, Pahang would have been impossible due to time and resource constraints (Saunders et al., 2015). Due to this particular factor and to ease the research process, a non-probabilities sampling approach is used in this research. Based on the figure below, the sampling framework consists of the theoretical population, the study population, the sampling frame, and the sample.

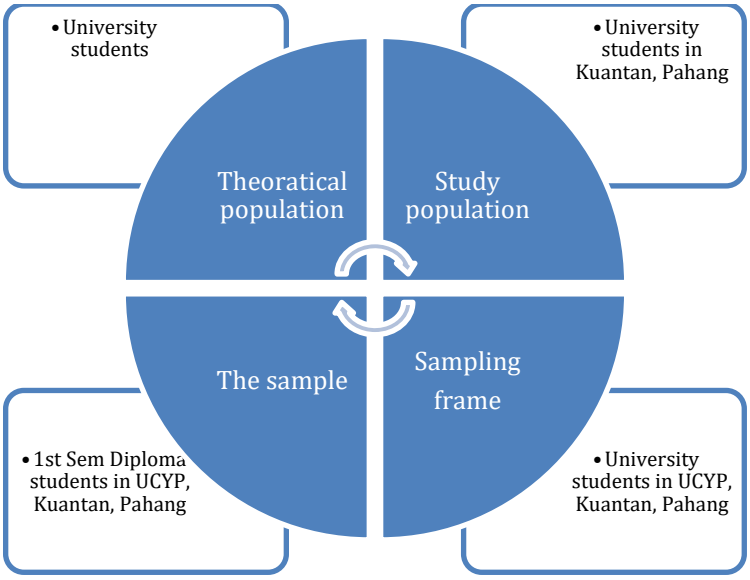

Figure 2. Sampling Framework

Therefore, based on the sampling framework, 130 1st year diploma students from different faculties within the University College of Yayasan Pahang were asked to participate. The age of all the participants involved was 18. Golafshani (Golafshani, 2003) stated that the validity for quantitative study requires statistical generalization to explore more situations and broader groups. The researcher understands that this sample might not widely generalize findings and not represent all situations; however, this study can be considered a pilot study from more extensive and experimental studies.

3.2. Instruments

The study being carried is made to be exploratory research, and the main aim is to understand the students' preferred learning styles and how the different learning styles affect academic performances. To look into the effects of learning styles of the university students in UCYP, the use of survey strategies was effective. (Vermunt, 2005).

This quantitative data was collected using the translated VARK questionnaire taken from https://vark-learn.com. The VARK questionnaire is a set of questions that consists of 16 questions based on different situations where there are four options to choose from. Each of the options is catered towards one of the four learning styles. The average time it took for each participant to answer the question was 10 minutes.

The other data collected for the research is the diploma students' final exam results for the English subject, a mandatory subject to take for 1st-semester diploma students. The final exam paper consists of multiple-choice questions, grammar questions, and comprehension questions, where the students have 2 hours to complete the exam.

3.3. Data Collection Procedures

Step 1: The researcher comes up with the VARK questionnaire and looks into the translated version of the questionnaire for the diploma students.

Step 2: The researcher then converts the VARK questionnaire into the Google form format to be sent to the 1st-semester diploma students within UCYP.

Step 3: The researcher liaises with the lecturer teaching the English subject to collect the diploma students' final examination results.

Step 4: The researcher collects both the results from the VARK questionnaire and the final exam results and tabulates it.

3.4. Technique of Analyzing the data

Once the data have been collected, the first form of data analyzed is the response from the VARK questionnaire in Google Form. Using the breakdown algorithm within the Google Form, the researcher will find out the learning style of the students. The technique used to analyze the data is first and foremost by identifying the preferred learning styles of the students while acquiring the English language. After the initial findings of what are the students' preferred choice of learning styles has been determined. The research will then look at the scores of each learning style to find out how the different learning styles affect the students' overall grades in their acquisition of the English language. This analysis will be done using the data of the students' English Finals paper.

4. Results & Discussion

4.1. Students' Learning Styles

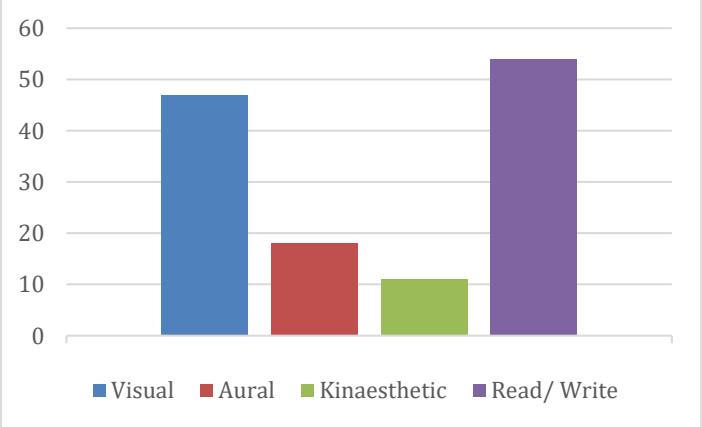

Figure 3. UCYP 1st Semester Diploma Student Learning Styles

The collected data above answers the first question: the preferred learning styles among the UCYP students; the data is taken from the Google Form questionnaire based on the VARK

module. As is shown in the figure above, it can be seen that the visual learning style (36.1%) and the read/write learning style (41.5%) seems to be the first and second choice of learning style, where else the third choice of learning style among the respondents was aural (13.8%), while the kinesthetic learning style was the least preferred styles of the respondents at (8.4%).

The next step in the research was to find out what effects the different learning styles have on the student's achievement in the English language; with that in mind, the other data collected and analyzed were the respondent's English results from their first semester. The code for the English subject is BLD 1182.

In this analysis of the data, we will be looking at how the students from the four learning styles fare in their final examination papers; this data is collected by matching the students of the four learning styles: visual, aural, read/write, and kinesthetic with their BLD 1182 final paper results. With the comparison of the data, we will determine which of the learning styles proves to be more effective in the acquisition of the English language.

From the 130 respondents of the VARK questionnaire, 54 students identified themselves as read/ write learners. The 54 students' English results were compiled, and the scores are presented in the table and figures below:

Table 1. Read/ Write Learners' Scores

MARKS	Number of Students	Percentage
0-39	0	0%
40-49	0	0%
50-59	9	16.6%
60-69	11	20.3%
70-79	19	35.1%
80-89	14	25.9%
90-100	1	1.8%

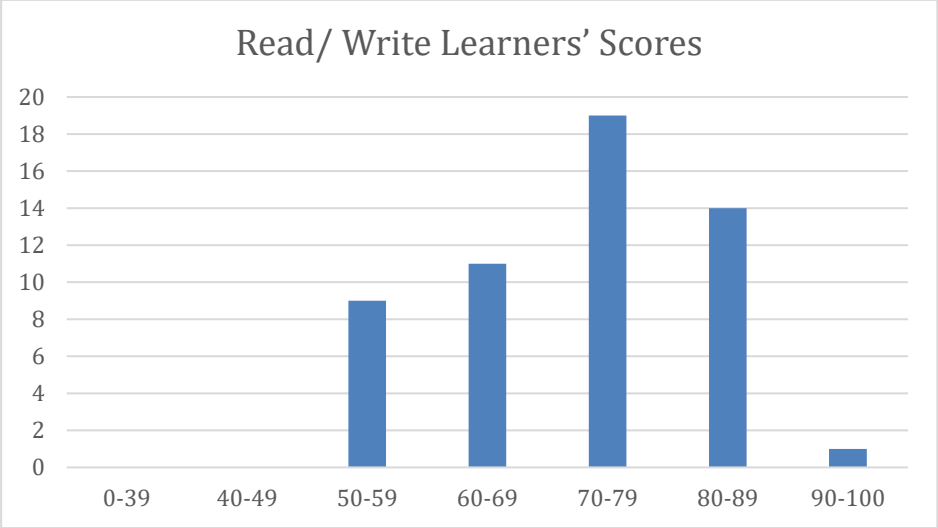

Figure 4. Read/Write Learners' Scores

From the 130 respondents of the VARK questionnaire, 47 students identified themselves as visual learners. The 47 students' English results were compiled, and the scores are presented in the table and figures below:

Table 2. **Visual Learners' Scores**

Marks	Number of Students	Percentage
0-39	0	0%
40-49	0	0%
50-59	9	19.1%
60-69	10	21.2%
70-79	23	48.9%
80-89	5	10.6%
90-100	0	0%

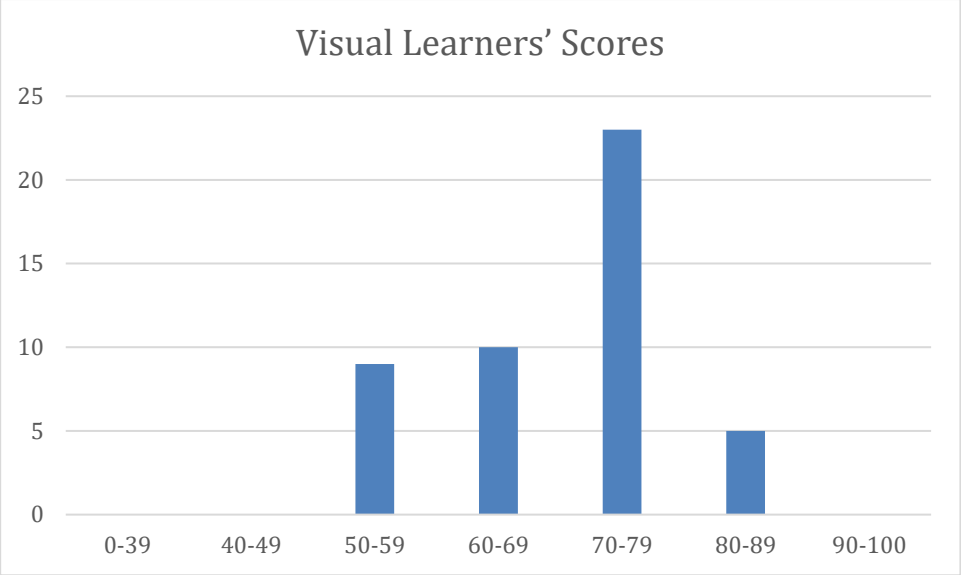

Figure 5. Visual Learners' Scores

From the 130 respondents of the VARK questionnaire, 18 students identified themselves as aural learners. The 18 students' English results were compiled, and the scores are presented in the table and figures below:

Table 3. **Aural Learners' Scores**

Marks	Number of Students	Percentage
0-39	0	0%
40-49	0	0%
50-59	9	50%
60-69	7	38.8%
70-79	1	5.5%
80-89	1	5.5%
90-100	0	0%

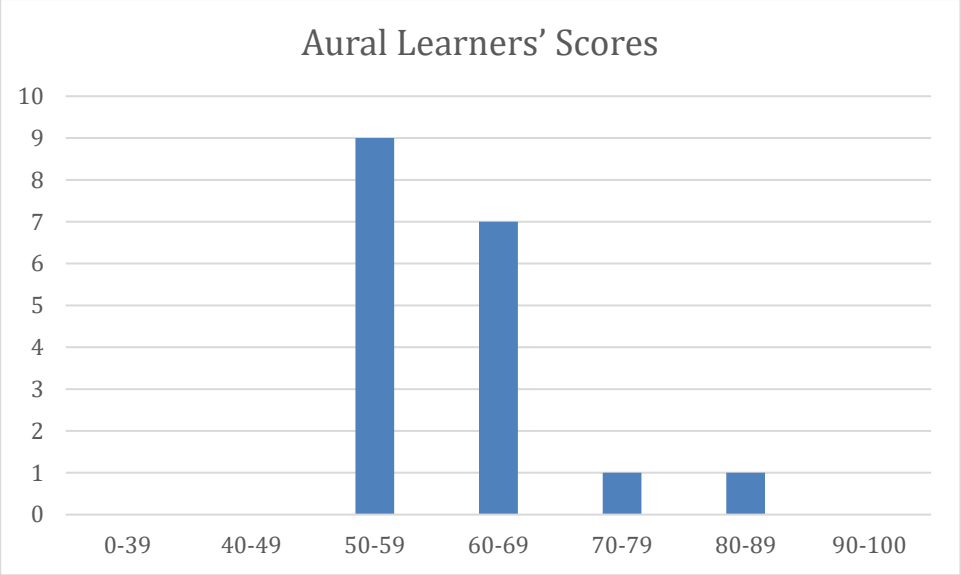

Figure 6. Aural Learner' Scores

From the 130 respondents of the VARK questionnaire, 11 students identified themselves as kinesthetic learners. The 11 students' English results were compiled, and the scores are presented in the table and figures below:

Table 4. **Kinesthetic Learners' Scores**

Marks	Number of Students	Percentage
0-39	0	0%
40-49	3	27.2%
50-59	4	36.3%
60-69	1	9%
70-79	2	18.1%
80-89	1	9%
90-100	0	0%

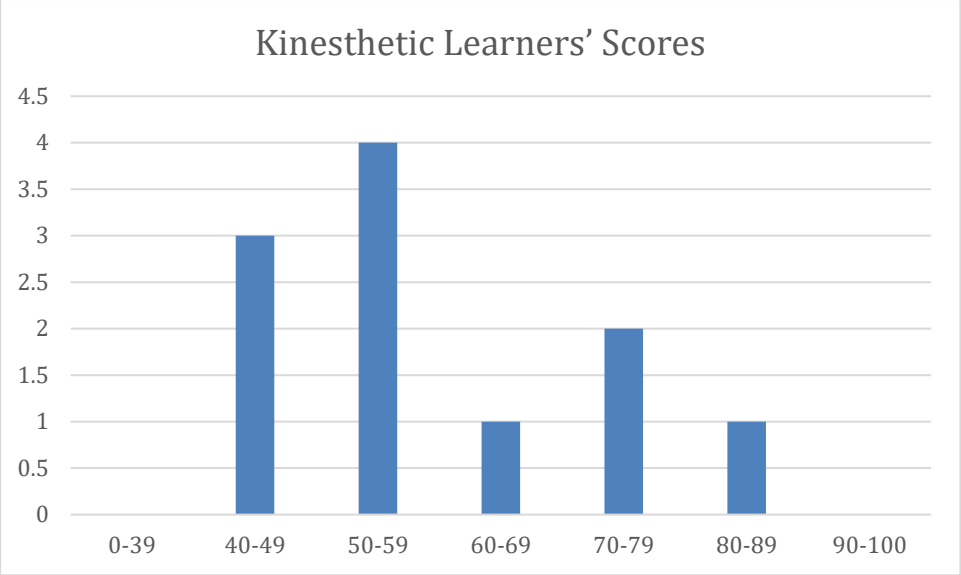

Figure 7. Kinesthetic Learners' Scores

From the analysis of the students' scores from each learning styles, we then moved on to analyzing the average scores of the students for each of the different learning styles and compared the learning styles against each other to determine which was the learning style had the highest average scores and which learning styles produced the lowest average scores.

Table 5. Average English score of different learning styles

Subject	Total Students	Learning Style	No. of participants	Mean (Average Score)
English	130	Visual	47	68.8
		Aural	18	59.9
		Read/Write	54	71.1
		Kinesthetic	11	57.9

As can be seen from Table 5, the learners who preferred the Read/Write learning style achieved a higher score (71.1). The second group that had an average score of (68.8) was visual learners. On the other hand, both aural and kinesthetic style learners' scores similar; their average scores were below 60, at 59.9 and 57.9, respectively.

5. Conclusion

This research was conducted to explore the learning preferences of different students and how the different learning styles affect the students' mastery of the English language. Based on the findings that have been presented, it shows that that the Read/Write learning style is the

predominant learning style among 1st-semester diploma students studying in UCYP. The second preferred learning style was the visual learning style. Aural and Kinesthetic learning styles placed third and fourth, respectively.

In the data collected, which measures students' achievement of English based on their learning styles, it can be seen that Read/ Write learners achieved a high average score. The kinesthetic learners were the group that achieves the lowest of the average scores in English in terms of learning styles.

As shown in the data and analysis, the learners who prefer the Read/ Write learning style were more proficient and tend to score in the higher percentile. The analysis shows that 62.8% of the 54 Read/ Write learners score above 70 marks. On the other end of the spectrum, the kinesthetic learning style only has 27.1% of its students scoring above 70.

5.1. Limitations

This research has its limitations. For the first part, by using the non-probabilities sampling technique, the sample size was small to represent the whole population. Secondly, the responses from the respondents answering the questionnaire may not have been accurate. Finally, with the time constraints and the unique situation that we are in, the research could only focus on a selected group of students within one university.

5.2. Further Research

Future research will need to encompass a much larger sample size to gain more reliable answers and findings. Furthermore, the research will need to include more universities within the vicinity of Kuantan for it to be more accurate. Another aspect to consider for the research would be to consider that learners might have particular learning style preferences, and the questionnaire should be modified to cater to students with multiple learning style preferences. These are some of the issues that should be considered for future researches on learning styles.

References

Akram Awla, H. (2014). Learning Styles and Their Relation to Teaching Styles. *International Journal of Language and Linguistics*, *2*(3), 241. https://doi.org/10.11648/j.ijll.20140203.23

Calvo, D. (2020, October 22). *A brief history of the English language*. Oxford International English Schools. https://www.oxfordinternationalenglish.com/a-brief-history-of-the-english-language/

Cassidy *, S. (2004). Learning Styles: An overview of theories, models, and measures. *Educational Psychology*, *24*(4), 419–444. https://doi.org/10.1080/0144341042000228834

Crystal, D. (2020, October 20). *English language | Origin, History, Development, Characteristics, & Facts*. Encyclopedia Britannica. https://www.britannica.com/topic/English-language

Dörnyei, Z. (2005). *The Psychology of the Language Learner: Individual Differences in Second Language Acquisition (Second Language Acquisition Research Series)* (1st ed.). Routledge.

Golafshani, N. (2003). Understanding Reliability and Validity in Qualitative Research. *The Qualitative Report*, *8*(4), 597-606. Retrieved from https://nsuworks.nova.edu/tqr/vol8/iss4/6

Hadriana, H., Primahardani, I., & Mahdum, M. (2019). Learning Style and Learning Achievement of Students of FKIP Universitas Riau In Learning English. *Journal of Educational Sciences*, *3*(3), 340. https://doi.org/10.31258/jes.3.3.p.340-352

Hulstijn, J. (2005). Theoretical and Empirical Issues in the study of Implicit and Explicit Second-Language Learning: Introduction. Studies in Second Language Acquisition, 27(2), 129-140. doi:10.1017/S0272263105050084

James, S., D'Amore, A., & Thomas, T. (2011). Learning preferences of first-year nursing and midwifery students: Utilising VARK. *Nurse Education Today*, *31*(4), 417–423. https://doi.org/10.1016/j.nedt.2010.08.008

Jennifer Weichel, Michigan State University Extension. (2018a, October 3). *What is their learning style? Part 1: Auditory learners*. MSU Extension. https://www.canr.msu.edu/news/whats_their_learning_style_part_1_auditory_learners

Jennifer Weichel, Michigan State University Extension. (2018b, October 3). *What's their learning style? Part 2: Kinesthetic learners*. MSU Extension.

https://www.canr.msu.edu/news/whats_their_learning_style_part_2_kinesthetic_learners

Jennifer Weichel, Michigan State University Extension. (2018c, October 3). *What's their learning style? Part 3: Visual learners*. MSU Extension. https://www.canr.msu.edu/news/whats_their_learning_style_part_3_visual_learners

Khanal, L., Shah, S., & Koirala, S. (2014). Exploration of preferred learning styles in medical education using VARK modal. *Russian Open Medical Journal*, *3*(3), 0305. https://doi.org/10.15275/rusomj.2014.0305

Li, M., & Alduais, A. (2018). A study on learning styles and their possible effect on academic performance among university students in Glasgow. *Research result. Sociology and management*, *4*(2), 27–44. https://doi.org/10.18413/2408-9338-2018-4-2-0-3

Macmillan, F. (2020, November 9). *Learning Styles: Kinaesthetic Learner Characteristics*. AUS. https://engage-education.com/aus/blog/kinesthetic-learner-characteristics-what-are-they/

Marcy, V. (2001). Adult Learning Styles: How the VARK© Learning Style Inventory Can Be Used to Improve Student Learning. *The Journal of Physician Assistant Education*, *12*(2), 117–120. https://doi.org/10.1097/01367895-200107000-00007

Moayyeri, H. (2015). The Impact of Undergraduate Students' Learning Preferences (VARK Model) on Their Language Achievement. *Journal of Language Teaching and Research*, *6*(1), 132. https://doi.org/10.17507/jltr.0601.16

Muniandy, J. (2013). Cognitive and perceptual learning styles of Malaysian university ESL learners: a socio-cultural approach. *TESOL International Journal.* Vol. 8, 27-45.

Newble, D. I., & Gordon, M. I. (1985). The learning style of medical students. *Medical Education*, *19*(1), 3–8. https://doi.org/10.1111/j.1365-2923.1985.tb01132.x

O'Malley, J., Chamot, A., Stewner-Manzanaraes, G., Russo, R., & Kupper, L. (1985). Learning strategies application with students of English as a second language. TESOL Quarterly, 19, 285-296

Oxford, R. L. (2003). Language learning styles and strategies: Concepts and relationships. *IRAL - International Review of Applied Linguistics in Language Teaching*, *41*(4), 1–25. https://doi.org/10.1515/iral.2003.012

Ph.D., R. S. J. (1997). *Thinking Styles* (First Edition). Cambridge University Press.

Reid, J. M. (1995). *Learning Styles in the Esl/Efl Classroom (Newbury House Teacher Development)* (1st ed.). Heinle & Heinle Pub.

Saunders, M. N. K., Lewis, P., & Thornhill, A. (2015). *Research Methods for Business Students (7th Edition)* (7th ed.). Pearson.

Sheu, C. M., Wang, P. L. & Hsu, L. (2013). Investigating EFL learning strategy use, GEPT performance, and gender difference among non-English major sophomores at a technological university. *Asian EFL Journal*. 15(1), 128-164.

Vermunt, J. D. (2005). Relations between student learning patterns and personal and contextual factors and academic performance. *Higher Education*, *49*(3), 205–234. https://doi.org/10.1007/s10734-004-6664-2

Widharyanto, B., & Binawan, H. (2020). Learning styles and language learning strategies of students from various ethnicities in Indonesia. *Jurnal Cakrawala Pendidikan*, *39*(2), 480–492. https://doi.org/10.21831/cp.v39i2.28173

Tertiary Students' Motivation Level in Online Learning Versus Face-to-Face Learning

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Abstract

Due to the COVID-19 pandemic and the enforcement of movement control order in the country, the conventional face-to-face (F2F) teaching and learning process in every classroom is replaced by online teaching and learning. Students' readiness and adaptation to online

teaching and learning were not considered in such a situation. Because of this sudden shifting in teaching and learning mode, this study aims to answer two questions: (1) Is there a significant difference in students' motivation level in solely online learning as compared to F2F learning? (2) In which aspect of online learning and F2F learning attracts students the most? Regarding the Attention, Relevance, Confidence, and Satisfaction (ARCS) motivation model by Keller (1987), a questionnaire was prepared to evaluate motivation in these four dimensions: A-Attention, R-Relevance, C-Confidence, and S-Satisfaction. Quantitative analysis was carried out to 100 data collected. Paired sample t-tests on the mean score for Attention, Relevance, Confidence, and Satisfaction in online and F2F learning were conducted, respectively. One-way analysis of variance was conducted to compare the mean score for Attention, Relevance, Confidence, and Satisfaction within each learning mode. The result showed that the mean score for Attention, Relevance, Confidence, and Satisfaction in F2F learning was significantly higher than the corresponding in online learning, respectively. Findings also indicated a significant difference among the four motivation components within online learning and within F2F learning. This study concluded that students were more motivated in F2F learning compared to online learning. However, by providing a better Internet connection and an effective learning management system that provides prompt communication between students and instructors, motivation in online learning can be improved.

Keywords: Motivation, ARCS Model, Online Learning, and Face-to-Face Learning

1. Introduction

The world is constantly changing, and many innovative ideas have been adopted to overcome obstacles and challenges. The novel coronavirus COVID-19 pandemic was a challenge that affected life globally. To curb the spreading of this disease, many countries implemented travel restrictions abroad and within the country. Trades were interrupted, and the global economy was severely affected. Since 18 March 2020, Malaysia enforced a 'movement control order' (MCO) nationwide to fight against the rise of COVID-19 cases, face to face activities were restrained. All businesses and offices, including education institutions, were closed. The conventional face-to-face (F2F) classroom teaching and learning changed to fully online teaching and learning.

With rapid development in information technology and the Internet, online learning is not new in education. Many studies were conducted on blended learning, which incorporated online learning in F2F learning (Bliuc et al., 2007; Q. Huang, 2016; Owens, 2017; Tseng &

Eamonn Joseph Walsh, 2016). (Wuwuh Yunhadi et al., 2020) Higher satisfaction among students in F2F compared to online learning because of social interaction among instructors and peers that enriched learning experiences. Studies by (Q. Huang, 2016; Owens, 2017; Tseng & Eamonn Joseph Walsh, 2016; Wuwuh Yunhadi et al., 2020) concluded blended learning was favored by students and indicated online learning complemented F2F learning.

Research on the impact of the COVID-19 pandemic in education has been done. A study highlighted principles for online education (Bao, 2020), another identified barriers to online learning (Baticulon et al., 2020), and the reality and challenges faced in the shift from F2F learning to distant learning was also published (Kitishat et al., 2020). (Meeter et al., 2020) showed students rated lower motivation and less satisfaction in online education since COVID-19. For the Malaysian context, some studies revealed that tertiary students in Malaysia lost motivation in learning (Tan, 2020) and unwilling to continue with online learning in the future, if possible (Chung et al., 2020).

This study aims to compare students' motivation level in online learning and F2F learning; to identify the aspect that attracts students the most in online and F2F learning, respectively. It has been suggested that the ARCS model could be used in different settings to enhance and consolidate the effective implementation of strategies involved (Arora & Sharma, 2018; Li & Keller, 2018). Hence, four dimensions for motivational tactics: A-Attention, R-Relevance, C-Confidence, and S-Satisfaction, are individually assessed in order to make a comparison between online learning and F2F learning. Since fully online learning is the new 'norm' in education, it is vital to identify students' motivation levels in each of these dimensions. The aspect that attracts students the most in respective online and F2F learning are also analyzed. It is hoped that findings from this study would provide valuable insights for instructors and policymakers to take the necessary actions to enhance learners' motivation to achieve learning objectives.

Research questions are:

1. Is there any significant difference for each dimension: Attention, Relevance, Confidence, and Satisfaction between online learning and F2F learning?
2. Is there any significant difference in Attention, Relevance, Confidence, and Satisfaction in online learning?
3. Is there any significant difference in Attention, Relevance, Confidence, and Satisfaction in F2F learning?
4. Which aspect of online learning and F2F learning attracts students the most?

2. Literature Review

Many surveys have been carried out to study the impact due to COVID-19 pandemic in education. Online learning referred to virtual synchronous and asynchronous teaching and learning through the Internet (Nuraeni et al., 2020). Synchronous teaching was conducted via platforms such as Zoom, Google Meet, and Voov. A national survey by (Baticulon et al., 2020)on medical students in the Philippines reported obstacles in conducting online learning involved struggle in online learning adaptation. A recent study by (Nuraeni et al., 2020) on students' perceptions of online learning during the COVID-19 pandemic revealed that students preferred F2F lectures compared to online lectures. (Kitishat et al., 2020) investigated the influence of COVID-19 in education and pointed out positive aspects and challenges in online learning.

Since the first Learning Management System (LMS) was introduced in 1995, subsequent growth of learning systems supported by web-based technologies, many terms evolved related to virtual teaching-learning. A systematic literature review of definitions of online learning from 1988 to 2018 revealed the five most frequently used terms: online learning, E-learning, blended learning, online education, and online course (Singh & Thurman, 2019). F2F learning referred to the teaching and learning process conducted in the classroom with physical communication among instructors and peers (Q. Huang, 2016). Social interaction in F2F learning provided enjoyable learning experiences (Wuwuh Yunhadi et al., 2020). Some studies were conducted on blended learning where online learning was incorporated in F2F learning. A paper discussed the interdependence of F2F learning and online learning (Q. Huang, 2016). Another study showed higher learning motivation among blended learners than traditional F2F learners (Tseng & Eamonn Joseph Walsh, 2016). A comparison study concluded significant differences in students' satisfaction in F2F and online learning, respectively (Wuwuh Yunhadi et al., 2020). Both F2F learning and online learning have respective advantages, yet respondents favored traditional F2F learning (Baisel et al., 2020). (Mather & Sarkans, 2018) investigated student perceptions in online and F2F learning. Students preferred F2F learning because of interaction with the instructor and engagement in class, while flexibility and accessibility in online learning influenced students' opted for online learning.

Motivation is essential in the teaching and learning process. According to (Alcivar, 2020) the level of motivation determined the degree of success in the teaching and learning process; motivational techniques conducted educationally would encourage students to generate interest and values in what they learned. Another study on motivation by Emda (2018)

highlighted intrinsic and extrinsic motivations that prepared and encouraged students to learn and face challenges. Since the teaching and learning process is now conducted solely online, would students' motivation in learning remain the same as in F2F learning? A study by (Meeter et al., 2020) on 166 students in a Dutch university revealed less satisfaction with online learning due to lack of social interaction and less motivation to study online due to less optimal facilities. (Tan, 2020) investigated the impact of COVID-19 on tertiary students who reported lower motivation and learning performance in online learning because of lacking infrastructure and social support. Another local study by (Chung et al., 2020) showed that most respondents would not choose to continue with online learning if possible. It also highlighted challenges in online learning, including difficulty understanding the course content, lack of face-to-face interaction, and technical issues such as limited data and unstable internet connection.

Even though many studies on the impact of COVID-19 in education have compared motivation in F2F and online learning, different approaches/methods were used to measure motivation. A literature review on the use of the ARCS model in education indicated that the ARCS model was applied to a variety of countries and educational settings, including online learning and F2F classroom (Li & Keller, 2018). The acronym ARCS refers to four categories for motivational tactics: Attention – to capture learner's interest and to stimulate curiosity to learn; Relevance – to meet learner's needs and goals; Confidence – to develop positive expectation to success, and satisfaction – to reinforce accomplishment. (Arora & Sharma, 2018) Learning could be enhanced by integrating four categories: Attention, Relevance, Confidence, and Satisfaction in the teaching process. Moreover, according to (Gopalan et al., 2017), the ARCS model was among the several motivational theories widely utilized in the learning discipline. Instruction librarians applied the ARCS model in their teaching practices to enhance students' motivation (Reynolds et al., 2017). Another study applied the ARCS model to measure students' motivational characteristics of a web-based course with a pre-post survey (Choustoulakis & Nikoloudakis, 2011). (Izmirli & Sahin Izmirli, 2015) examined experienced online learning respondents using an open-ended questionnaire based on ARCS model found that the most frequent motivating factor for online learning was item " in Confidence category and least frequent motivating factor was an item in Relevance category. A lack of study on the students' motivation compares fully online learning and F2F learning using the ARCS model. Hence, this study intends to fill in this gap.

3. Research Methodology

This quantitative survey collects responses from tertiary students who have completed an entire semester of online learning. These students can feedback their experiences in F2F learning before the pandemic and online learning now. The questionnaire was prepared using Google form. The link to the response was sent to students. This survey employed a nonprobability sampling method in data collection. A total of 100 responses was received within one month.

There are four sections in the questionnaire: Demographics of respondents in section 1, motivation level in online learning, and F2F learning in sections 2 and 3. The same items on motivation are repeated in section 2 and section 3. Questions on motivation are adapted from the instructional materials motivation survey (IMMS) found in the ARCS model designed by Keller [21,22]. Modifications are made to the IMMS considering local study context, a list of 31 items divided into four subsets. The subsets are Attention (8 items), Relevance (7 items), Confidence (8 items), and Satisfaction (8 items). The 5-point Likert scale is used to measure respondents' motivation levels. The scales are represented as 5 – strongly agree, 4 – agree, 3 – neither agree nor disagree, 2 – disagree and 1 - strongly disagree. There are 11 items phrased in a reverse sense; when students give a higher score in these items, the lower students' motivation level; hence, the scores for the reverse items shall be manually reversed in the calculation. The last section in the questionnaire consists of two questions that required written answers, asking which aspect the respondent liked most in each learning mode. A pilot study on the questionnaire has been conducted for content validity. As a result, the questionnaire is prepared in two versions (Bahasa Malaysia/English), and a brief explanatory note is added for each item in sections 2 and 3. Since respondents are of different nationalities, they are allowed to answer the questionnaire in either one language. The data analysis process was carried out using Microsoft Excel and IBM SPSS Statistics (version 26).

3.1 Statistical Analysis

The motivation level is measured based on four dimensions. For descriptive analysis, mean score and standard deviation for Attention, Relevance, Confidence, and Satisfaction in online learning and F2F learning are calculated. Dependent samples *t*-test is conducted to compare mean difference for each dimension between online learning and F2F learning. One-way analysis of variance (ANOVA) is performed to compare the mean difference among four dimensions in online learning and F2F learning, respectively. All tests are conducted at a 5% significance level; the test is statistical significance when $p < 0.05$. The statistical analysis is conducted based on the case as follows:

Statistical Plan

Case	Null Hypothesis, H_0	Analysis
A	There is no significant difference in the mean for each dimension of motivation level in online learning and F2F learning.	Dependent samples *t*-tests
B	There is no significant difference in the overall motivation mean in online learning and F2F learning.	Dependent samples *t*-tests
C	There is no significant difference in the means among four dimensions of motivation level in each learning mode.	ANOVA

4. Results and Discussion

4.1 Descriptive Analysis

The total number of respondents who responded to the questionnaire is 100, and there are missing data. Table 1 shows the distribution of respondents based on demographic attributes. Respondents were dominantly female (79%), ranging between 20 - 22 years (88%). These respondents were from semester 1 (3%), semester 2 (29%), semester 3 (30%) and semester 4 (38%). They were from diverse academic backgrounds: Early Childhood Education (40%), Islamic Institution Management and Islamic banking (37%), Conventional Business Administration (15%), Creative and Visual Art (6%), and Software Engineering (2%). 49% of these respondents indicated that they have no prior online learning experiences. Findings revealed that 51% of the respondents have experience of the online course before, and most (74%) used laptops for online learning.

Table 1: Respondents' Demographic Attributes

	Variable		***Percentage (%)***
1	**Gender**	Male	21%
		Female	79%
2	**Age**	below 20 years old	6%
		20 - 22 years old	88%
		23 - 25 years old	5%
		26 - 28 years old	1%
		above 28 years old	0%
3	**Race**	Chinese	4%
		Indian	1%
		Indonesia	3%
		Malay	92%
4	**Academic Program**	Bachelor in Software Engineering	2%
		Bachelor of Business Administration	15%

		Bachelor of Shari'a (Economic & Islamic Banking)	22%
		Bachelor in Early Childhood Education	40%
		Bachelor in Islamic Management with Halal Business	15%
		Bachelor of Visual Arts in Creative Design	6%
5	**Current Semester**	Semester 1	3%
		Semester 2	29%
		Semester 3	30%
		Semester 4	38%
6	**Have you participated in online other than the required classes?**	Yes	51%
		No	49%
7	**What device did you use to access online learning?**	Desktop Computer	2%
		Laptop	74%
		Smart Phone	23%
		Tab	1%
		Total	**100%**

4.2 Instrument Analysis

Section 2 and 3 in the questionnaire consist of items adapted from the instructional materials motivation survey (IMMS). Section 2 has items about motivation in online learning, while section 3 has items about motivation in F2F learning. Each section has four subsets: Attention (8 items), Relevance (7 items), Confidence (8 items), and Satisfaction (8 items). SPSS is used to run reliability analysis. Table 2 tabulated Cronbach's Alpha values for each subset and overall items for online and F2F learning, respectively. Cronbach's Alpha coefficients for Attention, Relevance, Confidence, and Satisfaction subsets were above 0.75; the overall four subsets in online and F2F were 0.97 and 0.96, respectively, suggesting adequate reliability.

Table 2: Reliability Statistics

	Cronbach's Alpha		
Subset	**Online**	**F2F**	**Number of items**
Attention	0.93	0.91	8
Relevance	0.87	0.87	7
Confidence	0.88	0.76	8
Satisfaction	0.88	0.88	8
Overall	0.97	0.96	31

4.3 Statistical Analysis

This subsection presents findings for cases A, B and C mentioned in the statistical plan above. Dependent samples *t*-test is performed to answer research question 1: Is there any significant difference for each dimension: Attention, Relevance, Confidence, and Satisfaction between online learning and F2F learning? ANOVA test is carried out to answer research questions 2 and 3: Is there any significant difference in Attention, Relevance, Confidence, and Satisfaction within online learning and F2F learning, respectively? Table 3 tabulated mean values for each dimension in motivation, mean for overall motivation, and dependent samples *t*-test between online and F2F learning.

Table 3: Means for 4-dimensions in Motivation

	Mean			
Dimension	Online	F2F	t-statistics	P-value
Attention	2.98	3.65	5.65	0.00*
Relevance	3.39	3.62	2.19	0.02*
Confidence	3.05	3.26	2.52	0.01*
Satisfaction	3.38	3.60	2.07	0.02*
Overall	12.81	14.13	3.39	0.00*

*significant difference, $p < 0.05$

Case A: Attention, Relevance, Confidence, and Satisfaction between Online and F2F learning comparison

According to Table 3, the mean for Attention in F2F learning (3.65) was higher than the mean in online learning (2.98); in addition, there is a significant difference in the mean for Attention in online learning and F2F learning, $t = 5.65$, $p < 0.05$. The mean for Relevance in F2F learning (3.62) was higher than the mean in online learning (3.39); there is a significant difference in the mean for Relevance level in online learning and F2F learning $t = 2.19$, $p = 0.02 < 0.05$. The mean for Confidence in F2F learning (3.26) was higher than the mean in online learning (3.05); there is a significant difference in the mean for Confidence level in online learning and F2F learning, $t = 2.52$, $p = 0.01 < 0.05$. The mean for Satisfaction in F2F learning (3.60) was higher than the mean in online learning (3.38); there is a significant difference in the mean for Satisfaction level in online learning and F2F learning, $t = 2.07$, $p = 0.02 < 0.05$.

Case B: Overall Motivation between Online and F2F learning comparison

The overall mean in F2F learning (14.13) was higher than the overall mean in online learning (12.81); motivation in F2F learning is significantly higher than online learning, $t = 3.39$, $p < 0.05$.

Case C: Attention, Relevance, Confidence, and Satisfaction in Respective Online and F2F learning Comparison

One-way analysis of variance (ANOVA) compares the mean of Attention, Relevance, Confidence, and Satisfaction within online learning and F2F learning, respectively. Table 4 tabulated ANOVA test result.

In online learning, the ANOVA test revealed F test value (9.41) was higher than the F critical value (2.63). F2F learning showed F test value (10.74) was much higher than the critical value (2.63). These two results concluded that there is a significant difference among Attention, Relevance, Confidence, and Satisfaction within online learning and F2F learning, respectively, $p < 0.05$.

Table 4: One-way ANOVA for motivation level in online learning and F2F learning

ANOVA single factor	**Online learning**	**F2F learning**
F test value	9.41	10.74
F critical value,	2.63	2.63
P-value	0.00*	0.00*

*significant difference, $p < 0.05$

Motivation Range comparison

The 5-point Likert scale used in the questionnaire is divided into four motivation levels: high, moderate-high, moderate, and low. Table 5 presents categories of motivation level with the respective percentage of respondents in online learning and F2F learning. The finding shows that more than 57% of respondents reported moderate-high and high motivation in F2F learning compared to 25% of respondents in online learning. Also, 35% of respondents reported low motivation levels in online learning compared to only 7% in F2F learning.

Table 5: Motivation Level According to Score Range

		Percentage (%)	
Level	**Score range**	**Online**	**F2F**
High	4.00 - 5.00	7%	12%
Moderate-High	3.50 - 3.99	18%	45%
Moderate	3.00 - 3.49	40%	36%
Low	< 3.00	35%	7%
		100%	100%

4.3 Analysis on Each Dimension in Motivation

A total of 31 items is divided into four subsets according to Attention (8 items), Relevance (7 items), Confidence (8 items), and Satisfaction (8 items). There were 11 reverse

items in the list (e.g., items 5, 6, and 7 in the Attention subset in Table 6). The scores in reverse items are manually reversed. In a reverse item, the lower score indicated higher motivation. In Attention's subset, much difference in mean scores in item 4 (2.94 vs. 4.00) and item 7 (2.41 vs. 3.35) is noticed. It highlighted that students are motivated in F2F learning because of precise information delivery, and they are less motivated in online learning due to distraction. In Relevance's subset, item 2-highlighted online learning (3.84) as better in equipping students to search for more information than F2F learning (3.53). Item 7 revealed low motivation in online learning (2.83) because of not enough interaction between instructor and peers compared to F2F learning (3.48). In the Confidence dimension, item 4 recorded the highest score in both online and F2F learning. It indicates that students are confident to pass the course regardless of learning mode. In the Satisfaction dimension, item 5 indicated that students are motivated to learn more in F2F learning than online learning (3.71 vs. 2.95).

Table 6: Individual Item in Each Dimension comparison

	Mean	
Attention	**Online**	**F2F**
1. The first lesson in the course can attract my Attention	3.38	3.86
2. I find the materials/resources used are exciting and attractive	3.68	3.81
3. I can pay attention to the most lesson in the course	2.90	3.83
4. Information is delivered clearly	**2.94**	**4.00**
5. I find the lessons are dull and boring (reverse)	2.72	3.30
6. I always have difficulty to follow the lessons (reverse)	2.71	3.50
7. I am easily distracted during a lesson (reverse)	**2.41**	**3.35**
8. I can develop consistency in learning	3.13	3.56
Overall mean	*2.98*	*3.65*
SD	*0.79*	*0.60*
Relevance		
1. I have the flexibility to learn at my own pace	3.36	3.43
2. This learning mode equips me to search for more information	**3.84**	**3.53**
3. I can get examples and explanations of how the knowledge of the course is used	3.56	3.72
4. I cannot learn well because of this mode of delivery (reserve)	3.00	3.60
5. This learning process does not help me to achieve a good result in the course (reverse)	3.45	3.56
6. The instructor interacts with students	3.72	4.00
7. There is not enough interaction with instructor and peers (reverse)	**2.83**	**3.48**
Overall mean	*3.39*	*3.62*
SD	*0.67*	*0.56*
Confidence		
1. I am encouraged to search for more information for the course	3.48	3.50

2. I am more confident in getting the relevant information on my own	3.39	3.42
3. I can do the exercises and assignments without much help from others	2.70	2.97
4. The organization of the content gives me Confidence that I can pass the course	**3.52**	**3.56**
5. I always encounter difficulties to do exercises and assignments (reverse)	3.00	3.43
6. I often seek help from peers and instructor (reverse)	2.36	2.71
7. The arrangement of the content of the course frightens me (reverse)	3.25	3.39
8. I am stressed by the work demand in the course (reverse)	2.69	3.12
Overall mean	*3.05*	*3.26*
SD	*0.67*	*0.45*
Satisfaction		
1. I am happy when I have completed exercise/assignment	4.12	3.88
2. I feel proud when I have completed the exercise/assignment	4.04	3.85
3. I am satisfied with this learning mode	3.44	3.83
4. I enjoy most of the lessons	3.22	3.78
5. At the end of the course, I want to learn more	**2.95**	**3.71**
6. I like searching and getting information on my own time	3.52	3.48
7. I can learn independently	3.56	3.45
8. I feel relief the course has come to an end (reverse)	2.19	2.80
Overall mean	*3.38*	*3.60*
SD	*0.67*	*0.58*

Respondents' answers in Section 4 of the questionnaire were summarized and presented in Table 7. 49% of the respondents wrote that flexibility of time and space was the aspect they like most in online learning, and 31% favored online learning the easy access of information. On the other hand, 79% of the respondents liked F2F learning because of 'in-person' communication and social interaction with instructors and peers.

Table 7: Summary of Respondents' Written Answers
Question 1: 'Which aspect in Online Learning attracts you most?'

Aspect	Details	Percentage
The flexibility of time and space	- Learning can be anywhere, especially in the comfort of home - No need to dress up to attend classes - Time is saved without traveling from home to attend classes - More time to complete assignments	49%
Information accessibility	- Able to obtain information / new ideas from the Internet	31%

	-	Able to complete assignment/homework with ease	
Communication	-	More Confidence to communicate online	6%
	-	More Confidence to raise questions to clear doubts	
Financial	-	Information obtained online; this saves the cost in printing/photocopying as well as the cost of reference book	4%
	-	Can be involved in a part-time job to earn extra income	
Independence	-	Training to be independent	2%
	-	Discipline in time management	
	-	Able to complete given task/assignment on time	
Assessment	-	Online assessment is easier	1%
Others	-	No specific comment	7%

Question 2: 'Which aspect in F2F Learning attracts you most?'

Aspect	Details		Percentage
Communication – with lecturer	-	Receive immediate instruction/feedback from the lecturer	54%
	-	Receive immediate clarification for doubts	
	-	Maintain rapport with lecturers	
Communication – with peer and teamwork	-	Discussion with peers to complete assignment/task	25%
	-	Maintain rapport with peers	
	-	Carry out group activities with ease	
	-	Discussion with team members	
		The complete task in a shorter time	
Environment - ambiance	-	Conducive to learn	11%
	-	More concentration and focus be given in class	
Practical	-	Hands-on experience	2%
Others	-	No specific comment	8%

5. Discussions

Responses from 100 students showed that 57% of them scored moderate-high and high motivation level (range ≥ 3.50) in F2F learning but only 25% in online learning; only 7% of respondents indicated low motivation level (range < 3.00) in F2F learning compared to 35% in online learning (Table 5). The dependent samples *t*-test (Table 3) indicates that the mean score for each dimension is significantly different between online and F2F learning. Each mean score in online learning is lower than the corresponding in F2F learning. These results support the finding that stated students doing online courses were less motivated due to a lack of self-discipline and time management skills (Wuwuh Yunhadi et al., 2020). Also, respondents preferred F2F learning to online learning (Nuraeni et al., 2020).

Moreover, Attention, Relevance, Confidence, and Satisfaction within online learning and F2F learning, respectively, are significantly different, as shown in ANOVA tests (Table 4). Online learning presented the highest mean score in Relevance. This result is consistent with findings in previous studies highlighted information availability easily accessible from website encouraged students to do online courses (Nuraeni et al., 2020; Wuwuh Yunhadi et al., 2020). More opportunity for distraction explained the lowest mean score in Attention, which agrees with previous studies (Chung et al., 2020; Nuraeni et al., 2020). In F2F learning, the mean score for Attention ranked the highest. This finding supports the work of other studies that concluded that students were more focused and gave a longer Attention span in F2F learning than online learning (Baisel et al., 2020; Wuwuh Yunhadi et al., 2020).

Analysis of items in each dimension (Table 6) highlighted strengths and weaknesses in online and F2F learning. The mean score for most items in F2F learning (28 out of 31 items) is in the medium and higher motivation level (range ≥ 3.00). However, there are 35% of the items (11 out of 31 items) in low motivation level (range < 3.00) in online learning, especially in the Attention's subset.

According to (Mather & Sarkans, 2018) immediate feedback through interacting among instructor and peers are essential to enhance the learning process. In addition, our finding in Attention's subset, students are motivated in F2F learning primarily because of precise information delivery. Students are less motivated in online learning because of distraction. It is supported by a study that revealed the distraction due to issues with online learning platforms, such as lack of skills and unstable internet access (Baticulon et al., 2020).

In addition to the study by (Mather & Sarkans, 2018) that highlighted flexibility and accessibility of online learning, an item in online learning that scored higher than F2F learning is found in the Relevance's subset: online learning is better in equipping students to search for more information.

A study by (Paul & Jefferson, 2019) revealed no significant difference in academic performance between the two learning modes. However, our finding in Confidence's subset shows that students are confident to pass the course irrespective of the learning mode, regardless of academic performance.

In the satisfaction subset, students are motivated to learn more in F2F learning compared to online learning. This finding contradicts (Baisel et al., 2020) reported that one advantage of online learning is further study.

6. Conclusions

This study concludes that there is a significant difference in each motivation dimension: Attention, Relevance, Confidence, and Satisfaction between online learning and F2F learning. There are significant differences among Attention, Relevance, Confidence, and Satisfaction dimension within online learning and within F2F learning. In online learning, the aspect that attracts them the most is the flexibility of time and space. In F2F learning, the 'in-person' communication with the lecturer is the aspect that attracts them the most. This study also reveals that motivation in online learning can be further enhanced (findings in Table 6). To improve Attention, the instructor should consider selecting a suitable platform for effective delivery of synchronous lessons and asynchronous tasks/tutorials. To improve Relevance, Confidence, and Satisfaction, the instructor should effectively deliver timely responses/feedbacks to students and provide information searching skills. Education institutions and policymakers have a role to play by providing better infrastructure and facilities for online learning. This study has its limitation. According to subject fields and skills, future studies should look into motivation in online learning among a broader group of students at a different level of studies.

Reference

Alcivar, C. M. M. (2020). The motivation and its importance in the teaching-learning process. *International Research Journal of Management, IT and Social Sciences*, *7*(1). https://doi.org/10.21744/irjmis.v7n1.832

Arora, A. S., & Sharma, A. (2018). Integrating the ARCS Model with instruction for enhanced learning. *Journal of Engineering Education Transformations*, *32*(1, July 2018).

Baisel, A., M., V., & P., S. (2020). *An Experiential Study on the Learners' Perception of E-Learning and Traditional Learning*. *October*, 46–52. https://doi.org/10.4018/978-1-7998-3464-9.ch006

Bao, W. (2020). COVID -19 and online teaching in higher education: A case study of Peking University. *Human Behavior and Emerging Technologies*, *2*(2), 113–115. https://doi.org/10.1002/hbe2.191

Baticulon, R. E., Alberto, N. R. I., Baron, M. B. C., Mabulay, R. E. C., Rizada, L. G. T., Sy, J. J., Tiu, C. J. S., Clarion, C. A., & Reyes, J. C. B. (2020). Barriers to online learning in the time of COVID-19: A national survey of medical students in the Philippines. *MedRxiv*, 1–19.

Bliuc, A. M., Goodyear, P., & Ellis, R. A. (2007). Research focus and methodological choices in studies into students' experiences of blended learning in higher education. *Internet and Higher Education*, *10*(4), 231–244. https://doi.org/10.1016/j.iheduc.2007.08.001

Choustoulakis, E., & Nikoloudakis, E. (2011). Applying ARCS Model to Assess the Motivational Characteristics of a Web-based Course in Economic Education in Greece. *Global TIME, Schamber 1994*. http://www.editlib.org/recording/37076

Chung, E., Subramaniam, G., & Dass, L. C. (2020). Online learning readiness among university students in Malaysia amidst Covid-19. *Asian Journal of University Education*, *16*(2), 45–58. https://doi.org/10.24191/AJUE.V16I2.10294

Emda, A. (2018). Kedudukan Motivasi Belajar Siswa Dalam Pembelajaran. *Lantanida Journal*, *5*(2), 172. https://doi.org/10.22373/lj.v5i2.2838

Gopalan, V., Bakar, J. A. A., Zulkifli, A. N., Alwi, A., & Mat, R. C. (2017). A review of the motivation theories in learning. *AIP Conference Proceedings*, *1891*(October 2017). https://doi.org/10.1063/1.5005376

Huang, B., & Hew, K. F. (2016). Measuring Learners' Motivation Level in Massive Open Online Courses. *International Journal of Information and Education Technology*, *6*(10), 759–764. https://doi.org/10.7763/ijiet.2016.v6.788

Huang, Q. (2016). Learners' Perceptions of Blended Learning and the Roles and Interaction of

f2f and Online Learning. *ORTESOL Journal*, *33*(2013), 14–33.

Izmirli, S., & Sahin Izmirli, O. (2015). Factors motivating preservice teachers for online learning within the context of ARCS motivation model. *Turkish Online Journal of Distance Education*, *16*(2), 56–68. https://doi.org/10.17718/tojde.26620

Kitishat, A. R., Omar, K. H. Al, & Momani, M. A. K. Al. (2020). The Covid-19 Crisis and Distance Learning: E-Teaching of Language between Reality and Challenges. *The Asian ESP Journal*, *16*(5.1), 316–326.

Li, K., & Keller, J. M. (2018). Use of the ARCS model in education: A literature review. *Computers and Education*, *122*(May 2017), 54–62. https://doi.org/10.1016/j.compedu.2018.03.019

Loorbach, N., Peters, O., Karreman, J., & Steehouder, M. (2015). Validation of the Instructional Materials Motivation Survey (IMMS) in a self-directed instructional setting aimed at working with technology. *British Journal of Educational Technology*, *46*(1), 204–218. https://doi.org/10.1111/bjet.12138

Mather, M., & Sarkans, A. (2018). Student Perceptions of Online and Face-to-Face Learning. *International Journal of Curriculum and Instruction*, *10*(2), 61–76. http://search.ebscohost.com.ezproxy.jamk.fi:2048/login.aspx?direct=true&db=eric&AN=EJ1207234&site=ehost-live

Meeter, M., Den Hartogh, C. F., Bakker, T., De Vires, R. E., & Plak, S. (2020). College students ' motivation and study results after COVID-19 stay-at- home orders. *Vrije Universiteit Amsterdam*, *December*.

Nuraeni, L., Purwasih, R., & Mutakim, J. (2020). IKIP Siliwangi student's perceptions of online teaching and learning process during COVID-19 pandemic? *Journal of Physics: Conference Series*, *1657*, 012084. https://doi.org/10.1088/1742-6596/1657/1/012084

Owens, S. T. (2017). A Quantitative Comparative Study of Blended and Traditional Models in the Secondary Advanced Placement Statistics Classroom. *ProQuest LLC*, *September*, 1–109. https://search.proquest.com/docview/2013522097?accountid=14511%0Ahttps://ucl-new-primo.hosted.exlibrisgroup.com/openurl/UCL/UCL_VU2?url_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:dissertation&genre=dissertations+%26+theses&sid=ProQ:ERIC&atitle=&titl

Paul, J., & Jefferson, F. (2019). A Comparative Analysis of Student Performance in an Online vs. Face-to-Face Environmental Science Course From 2009 to 2016. *Frontiers in Computer Science*, *1*(November). https://doi.org/10.3389/fcomp.2019.00007

Reynolds, K. M., Roberts, L. M., & Hauck, J. (2017). Exploring motivation: integrating the ARCS model with instruction. *Reference Services Review*, *45*(2), 149–165. https://doi.org/10.1108/RSR-10-2016-0057

Singh, V., & Thurman, A. (2019). How Many Ways Can We Define Online Learning? A Systematic Literature Review of Definitions of Online Learning (1988-2018). *American Journal of Distance Education*, *33*(4), 289–306. https://doi.org/10.1080/08923647.2019.1663082

Tan, C. (2020). The impact of COVID-19 on student motivation, community of inquiry and learning performance. *Asian Education and Development Studies*, *10*(2), 308–321. https://doi.org/10.1108/AEDS-05-2020-0084

Tseng, H., & Eamonn Joseph Walsh, J. (2016). Blended Versus Traditional Course Delivery Comparing Students' Motivation, Learning Outcomes, and Preferences. *The Quarterly Review of Distance Education*, *17*(256), 43–52.

Wuwuh Yunhadi, Samsu Armadi, & Didi Sudrajat. (2020). Is Face-to-face and Online Teaching Equal in Teaching Business English Course?: Evidence from the University of Kutai Kartanegara, Indonesia. *The Asian ESP Journal*, *16*(2.2), 111–125.