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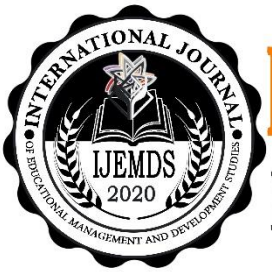

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Communicative Competence and Oral Language Usage of Filipino Learners in English

[1]Rosel Bernadette A. Bautista & [2]Jasper M. Del Valle

Abstract

Communicative competence is heavily emphasized under the K-12 Basic Education Curriculum as language is the primary instrument of thought. Hence, the goal of this study is to create speaking activities to reinforce communicative competence and oral language usage with a total of 154 Grade 9 learners using stratified random sampling. A researcher-made questionnaire was used to assess the student respondents' perceived communicative competence and oral language usage. Results showed that students were "advanced" in communicative competencies such as grammar competence, discourse competence, sociolinguistic competence, and strategic competence. The English language, on the other hand, is "often" used at home, on different platforms, and in the community. This demonstrated that the student respondents' communicative competence was significantly related to their use of oral language. In this regard, the findings imply that speaking activities will strengthen students' communicative competence toward oral language used to ensure maximum participation and use of the target language shortly, where students can approach speaking as a way to negotiate to mean and establish social relations with others.

Keywords: *Communicative competence, oral language usage, target language, discourse competence, sociolinguistic competence, strategic competence*

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1. Introduction

Speaking is considered a channel by humans as a form of interaction. It is a basic human right that has the least restrictions and is regarded as highly important by law. Speaking makes all human beings unique from other living organisms. Speech helps communicate thoughts, ideas, suggestions, and comments most naturally and reliably without much distortion of information. Thus, to master speaking skills, learners have to do some practice. Unfortunately, most of the language learners only spend their practicing time in a classroom. The lack of practice makes it difficult for learners to deliver their ideas to other people.

Executive Order No. 210 of the Department of Education, (Establishing the Policy to Strengthen the Use of the English Language as a Medium of Instruction in the Educational System) states that English language shall be used as the primary medium of instruction in all public and private schools in the secondary level, including those established as laboratory and/or experimental schools, and non-formal and vocational or technical educational institutions. As the primary medium of instruction, the percentage of time allotment for learning areas conducted in the English language is expected to be not less than seventy percent (70%) of the total time allotment for all learning areas in the secondary level. It is the objective of the foregoing policies to develop the aptitude, competence, and proficiency of all students in the use of the English language to make them better prepared for the job opportunities emerging in the new, technology-driven sectors of the economy.

With the demand of students' communicative competence in Grade 9 level, there are some problems that the researcher has observed. Based on the observation, the lack of students' communicative competence is the problem. It is not only during the time of the pandemic, yet be it in a normal class, students are not enthusiastic and interested in the given activities. It is very evident in their performance and output submitted specifically in the subject, English. Their vocabulary, grammar, and pronunciation are insufficient which makes them unable to say something. These observations give justice to the study which aims to reinforce the communicative competence and oral language usage for there is a need to come up with speaking activities that may help students during distance learning. Ultimately, the researcher believes that education must prepare young people for the real world, and that

communicative competence is an important aspect of school life. This will greatly assist language teachers in developing and improving students' communicative competence to ensure maximum participation and use of the target language despite the current situation in which students can approach speaking as a way to negotiate to mean and establish social relations with others shortly.

2. Literature review

2.1. Communicative Competence

Communication is the most important aspect of human relationships. It is the ability to communicate ideas and feelings clearly and effectively. Learning to communicate effectively is an essential ingredient in a healthy relationship with family, friends, and business associates (Morrision, 2014). It was affirmed by Kubat (2017) that effective communication is considered one of the most important skills that individuals should have. Receptive and expressive language abilities constitute a significant aspect of effective communication in terms of language skills.

Moreover, M. Obaidul et al. (2013) argues communicative competence and speaking effectiveness are capabilities to communicate effectively through any medium of language. Learners should not only have linguistic knowledge about the cultural ways of interacting with others in different social contexts. The learner who has such knowledge is considered communicatively competent. Communicative competence includes grammatical competence, the knowledge about inter-sentential relationships, discourse competence, knowledge about the rules and norms governing the appropriate timing and realization of a speech act; sociolinguistic competence, the knowledge about the culture of native speakers to enable the target language which is socially and culturally acceptable by the native users and the strategic competence which is the ability to compensate for the imperfect knowledge of linguistic. Therefore, the learners should have all these types of competence to become effective communicators in speaking in English.

2.2. Grammar Competence

It is demanding to speak a second language. Lent and Brown (2013) mention several features that interact to make speaking a challenging language as it is. There are: fluent speech contains reduced forms such as contractions, vowel reduction, and elision, the use of

slang and idioms of speech, the students must acquire the stress, rhythm, and intonation of English and the most difficult aspect of spoken English is that it is always accomplished through interaction. On the other hand, Diaz (2013) emphasizes that communicators are aware of the component units of language sounds, word phrases, and sentences. Thus, this enables the language users to think about language independently of his/ her comprehension and production abilities talk about it, analyze it and judge it as correctness or appropriateness. This linguistics intuition makes one decide about grammatical acceptability of the language he/she produces and received. Furthermore, Marulanda and Martinez (2012) enumerate the attributes of an effective oral language which include clarity in terms of correct grammar, short words, shorter sentences, and specific words; avoiding the use of slang, tautology, and redundancy, vague words, directness, and conversationalists; appropriateness and vividness.

Humans are programmed to speak before they learn to read and write. In any given, human beings spend much more time interacting orally with language rather than using it in its written form. Speaking is the most important skill because it is one of the abilities that is needed to perform a conversation. English speaking is not an easy task because speakers should know many significant components like pronunciation, grammar, vocabulary, fluency, and comprehension. Learners should have enough English speaking ability to communicate easily and effectively with other people. Rivers studied the use of language outside the classroom situation and understood that speaking is used twice as much as reading and writing combined.

2.3. Discourse Competence

According to Deason (2012), communicating is more than just words. The use of voice, facial expression, and body language affects the messages given. Students are not always aware that their posture or the way they approach another person speaks volumes in itself. By creating awareness around the expressive nature of the way a person uses their body and voice, teachers can help pupils to become critically aware of the non-verbal behaviors that will equip them to express themselves effectively. Speaking is very important for an effective speaker-listener relationship. Students need to recognize pauses in a conversation where they can take a turn, interrupt, ask a question or change the subject. Teachers can explicitly teach turn-taking so that all pupils are encouraged to speak e.g. circle time where everybody has a turn, asking students to work with a partner and choose who will

go first. Cabaysa and Baetiong (2014) explains that students are predisposed to employ language learning strategies when they participate in speaking tasks. Awareness language learning strategies would enable them to monitor the effectiveness of their strategy use and help them develop autonomy in learning English.

Bashir et al. (2013) identify that one of the factors that affect students' English speaking was using English as a medium of instruction. For this, teacher should emphasize the use of English as a medium of instruction and should promote interactive techniques while teaching to improve students' English speaking. Moreover, Hismanoglu (2011) asserts that mastering the use of the English language plays a significant role in determining one's upward and mobility in today's globalization.

2.4. Sociolinguistic Competence

Pupils should be able to speak in a well-structured way and develop their ability to take part in conversations, discussions, and negotiation and express their views and consider those of others (Ritchie, 2011). Spoken language is not only a reflection of the speaker's social and cultural background but is also part of the speaker's identity. Consequently, people are inevitably judged by their way of speaking which means that whoever utters something is vulnerable. In today's English classroom, pupils seem to speak more in their mother tongue than in English. Yet to develop their spoken proficiency in English, learners take all the possibility to practice the skill.

Wang (2014) investigated Chinese EFL learners who have some problems in speaking English fluently and accurately because their speaking competence may be affected by cognitive, linguistic, and emotional factors. The study was conducted to achieve the learners' oral proficiency by evaluating the three vital models of teaching English speaking, while-speaking, and an extension activity. Meanwhile, in the study of Mizne (1997), it was found that teacher can use language chunks as a medium to improve students' ability in speaking, especially for young learners.

2.5.Strategic Competence

Diverse needs of students in any English leads to varied teaching methods. The diverse needs of the students in any English course call for diverse approaches to instruction.

While knowledge of content is essential in teaching any discipline, effective teaching is the result of integrating content and pedagogical knowledge. The study of Taous (2013) emphasized that Teaching English as a Foreign Language requires students to learn the four skills: writing, reading, listening, and speaking. For the second language learners to be a proficient partner in conversation, he needs to be skilled as both speaker and listener. However, this interdependence has not always been appreciated by language teachers who have often separated off listening and speaking as discrete parts of language competence. Learners need to be given opportunities to practice both set-off skills and to integrate them in conversation.

2.6. Oral Language Usage

Shiel et al. (2012) state that "oral language is the child's first, most important, and most frequently used structured medium of communication. It is the primary means through which each child will be enabled to structure, evaluate, describe, and control his/her experience. In addition, and most significantly, oral language is the primary mediator of culture, how children locate themselves in the world and define themselves with it and within it".

Academic learners will need to practice with different sorts of activities. According to Green (2021), in general, English as the second language of students needs the most extensive authentic practice in-class participation such as taking part in discussions, interacting with peers and teachers, and answering and asking questions. These students may be facing some sort of existing examination after the course that will determine whether or not that they are competent to teach English to take other academic courses for credit and so on. As a result, these learners take their course work seriously and have high expectations of the teachers. Yet even ask for some instruction on the more interpersonal aspect of oral communication.

Huang et al. (2021) discussed the current practice in oral skills pedagogy in terms of how to structure an oral skills class and determine its content, along with implementing a variety of classroom activities that promote skills development and understanding issues related to classroom evaluation of speaking skills and testing via large- scale oral communication. She further discussed that one of the more recent trends in oral skills

pedagogy is the emphasis on having students analyze and evaluate the language that they or others produce. In other words, it is not adequate to have students produce lots of languages; they must become more meta linguistically aware of the many features of the language to become competent speakers and interlocutors in English.

Dincer and Yesilyurt (2013) carried out a study towards teachers' beliefs on speaking skills based on motivational orientations. The results of their study indicated that the teachers had negative opinions about speaking instruction though they believed that it was of great significance in speaking skills. The results also revealed that the teachers felt unskilled in oral communication though they had various motivational orientations towards speaking English.

On the other hand, Ella (2018) stated that learners' personal choice of learning strategies and their level of language proficiency is perceived to be good predictors of success in L2 learning. The use of overt or covert learning strategies in dealing with language learning tasks may indicate students' level of language proficiency and vice versa.

3. Methodology

The study utilized descriptive method of research, which describes a phenomenon or a subject. Eventually, one can gather data to study a target audience or a particular subject. It aims in ascertaining certain opinions and behavior of people usually by questioning a representative or a group of people and it is used to observe and describe a research subject or problem without influencing or manipulating the variables in any way. The researchers do not control or manipulate any of the variables, but only observe and measure them.

The participants of the study were the Grade 9 learners from the school year 2020-2021 handled by the researcher which is composed of five sections namely: Everlasting, Iris, Jasmine, Kalmia, and Orchid. The study used stratified random sampling to obtain a sample population that best represent the entire population of 65% based on the marginal error of .05. Overall, out of 237 learners, there were 154 total number of respondents. In addition, for the reliability test, another 30 Grade 9 students were selected.

Table 1

Distribution of Respondents by Section

Section	Total number of Grade 9 learners	Total number of respondents
Grade 9- Everlasting	49	32
Grade 9- Iris	45	29
Grade 9- Jasmine	48	31
Grade 9- Kalmia	47	31
Grade 9- Orchid	48	31
Total Number of Respondents		**154**

To draw important data and information needed to answer the problem, the study employed a descriptive survey method utilizing a data-gathering instrument which was in the Google form. A researcher-made questionnaire was crafted composed of two parts. The first part consisted of communicative competence such as Grammar Competence, Discourse Competence, Sociolinguistic Competence, and Strategic Competence wherein they checked their level of communicative competence. Meanwhile, the second part determined their language usage as perceived by themselves also. These are Language usage at home, Language usage using different platforms, and Language usage in the community. Each communicative competence consisted of 5 items and 20 overall, from which the respondents were asked to choose from numbers 1-4 according to how they perceived each given indicator.

For validation, it was checked by three key persons, Head Teacher I- English, Master Teacher I- English, and English Coordinator who were considered experts in the field of English. After scrutinizing the questionnaire item by item, the equitable distribution of questionnaire by component was formed. The set of questions was subjected to a test-to-test process, which resulted in the establishment of the instrument's reliability, with the first part, communicative competence, consisting of 10 items and 40 total with the same indicators and scale, 1-4. Part 2 included 5 items for a total of 15 with the same scale and indicators as part 1. Following the reliability test, the researcher condensed the first section down to only five items. In addition, part 2, oral language usage particularly the language usage using different platforms was reconstructed in part 2 because it did not meet the criteria for a reliable question.

The data gathered in this study were tabulated and each mean score was computed from the responses on the questionnaires. The statistical treatment used was Weighted Mean

to determine the communicative competence level of learners as perceived by themselves in terms of grammar, discourse, sociolinguistic and strategic competence; and the learners' usage of oral language in terms of usage at home, usage in different platforms, and usage in the community. Also, Pearson Product-Moment Correlation of Coefficient (Pearson's –r) was utilized to determine the significant relationship between the communicative competence and the learners' oral language usage.

4. Findings and Discussion

Table 2 presents the learner's perception of the level of communicative competence in terms of grammar competence as "advanced" based on the responses of the respondents having a composite mean of 2.71. The highest mean score of 2.80 was given to indicator 5 "select and use proper intonation" with a verbal interpretation of advanced and indicator 1 "speak fluently and accurately in most situations using verbal resources" got the lowest mean score of 2.53 with a verbal interpretation of advanced as well.

Table 2

Grammar Competence

Indicators As a student, I…	Weighted Mean	Verbal Interpretation
1. speak fluently and accurately in most situations using verbal resources.	2.53	Advanced
2. figure out how words are broken into different sounds.	2.73	Advanced
3. use vocabulary sufficient to express ideas and feelings.	2.78	Advanced
4. use clear voice and precise pronunciation of words with people.	2.69	Advanced
5. select and use proper intonation.	2.80	Advanced
Composite Mean	**2.71**	**Advanced**

Legend: 3.26 – 4.00 Expert; 2.51 – 3.25 Advanced; 1.76 – 2.50 Basic; 1.00 – 1.75 Needs Improvement

The result revealed that the learners were highly aware of the appropriate use of the English language particularly in grammar as they were able to recognize among themselves the different features of the language such as structure, speech sounds, and its use in the varied contexts of communication showed their grammar competence. This relates to the description of Leong and Ahmadi (2017) that grammatical competence can help speakers apply and perceive the structure of the English language correctly which leads to their fluency. Learners should know words and sentences. They should comprehend how words are divided into different sounds and how sentences are stressed in specific ways.

Table 3 manifests the perception of the learner respondents on the level of communicative competence in terms of discourse competence having a composite mean of 2.58 given a verbal interpretation of "advanced". On the perceived level of competence, indicator 3 "value and respect the rules of oral interaction, gestures and body language" has the highest weighted mean of 2.88 which has a verbal interpretation of advanced and the least gained a weighted mean of 2.43 which is an indicator 1 "speak confidently in front of a small group or even huge crowd" having a verbal interpretation of basic.

Table 3

Discourse Competence

Indicators As a student, I…	Weighted Mean	Verbal Interpretation
1. speak confidently in front of a small group or even a huge crowd.	2.43	Basic
2. interact spontaneously and confidently in formal or informal communicative situations.	2.45	Basic
3. value and respect the rules of oral interaction, gestures, and body language.	2.88	Advanced
4. express in presenting knowledge, facts, and opinion orally.	2.71	Advanced
5. speak smoothly with no hesitation that does not interfere with communication.	2.44	Basic
Composite Mean	**2.58**	**Advanced**

Legend: 3.26 – 4.00 Expert; 2.51 – 3.25 Advanced; 1.76 – 2.50 Basic; 1.00 – 1.75 Needs Improvement

The result pointed out that their knowledge is advanced using the rules and norms governing the appropriate timing and realization of speech. Thus, learners know how to tie sentence elements together by reference, repetition, or synonyms in cohesion and how to construct speech by coherence. However, there are some points that they fall on the basic level of competence specifically on speaking smoothly that does not interfere with communication. According to Deason (2012). communicating is more than just words. Speaking is very important for an effective speaker-listener relationship. Students need to recognize pauses in a conversation where they can take a turn, interrupt, ask a question or change the subject. Teachers can explicitly teach turn-taking so that all pupils are encouraged to speak e.g. circle time where everybody has a turn, asking students to work with a partner and choose who will go first. Through this, students will be able to speak confidently be it in front of a small group or even a huge crowd.

As seen in table 4, the perceived level of communicative competence in terms of sociolinguistic competence is "advanced" having the composite mean score of 2.68. On the

perceived level of competence in terms of sociolinguistic, the highest weighted mean of 2.92 was given by the respondents in indicator 2 “consider and give due respect to the views and ideas” having a verbal interpretation of advanced. Meanwhile, the least weighted mean of 2.48 was given to indicator 1 “can converse and interact harmoniously” with a verbal interpretation of basic.

Table 4

Sociolinguistic Competence

Indicators **As a student, I…**	**Weighted Mean**	**Verbal Interpretation**
1. can converse and interact harmoniously.	2.48	Basic
2. consider and give due respect to the views and ideas.	2.92	Advanced
3. select suitable verbal as well as non-verbal means of expression in everyday situations both inside and outside of the school.	2.70	Advanced
4. deliver a message with appropriate social meanings.	2.77	Advanced
5. am familiar with the culture of native speakers.	2.51	Advanced
Composite Mean	**2.68**	**Advanced**

Legend: 3.26 – 4.00 Expert; 2.51 – 3.25 Advanced; 1.76 – 2.50 Basic; 1.00 – 1.75 Needs Improvement

This justifies that learners are greatly aware in making use of the rule of expression and understanding of the appropriate social meaning and grammatical forms of different contexts which proved their sociolinguistic competence however, in some instances, they were not familiar with the culture of native speakers, thus, they have a dilemma in interacting harmoniously. This associates M. Obaidul et al. (2013) wherein learners should not only have linguistic knowledge about the cultural ways of interacting with others in different social contexts. The learners should also know the culture of native speakers to enable the social target language. Therefore, the learners should have all these types of competence to become effective communicators in speaking English.

It can be gleaned in table 5 that the learners’ perception of the level of communicative competence in terms of strategic competence as “advanced” based on the responses of the respondents having a composite mean of 2.63. The highest mean score of 2.83 was given to indicator 5 “can use language appropriately” with a verbal interpretation of advanced and the indicator 2 “use non-verbal gesture to converse and give emphasis to their message” got the lowest mean score of 2.51 with a verbal interpretation of advanced on the level strategic competence in communication.

Table 5

Strategic Competence

Indicators As a student, I…	Weighted Mean	Verbal Interpretation
1. employ a variety of motivational approaches to make communication interesting and effective.	2.53	Advanced
2. use non-verbal gestures to converse and give emphasis to their message.	2.51	Advanced
3. utilize a variety of sentence structures to stimulate the interest of the listeners.	2.66	Advanced
4. adjust to the present communication situation accordingly.	2.61	Advanced
5. can use language appropriately in different situations.	2.83	Advanced
Composite Mean	**2.63**	**Advanced**

Legend: 3.26 – 4.00 Expert; 2.51 – 3.25 Advanced; 1.76 – 2.50 Basic; 1.00 – 1.75 Needs Improvement

The result of this study implies that the learner respondents were extremely aware of how to compensate for the imperfect knowledge of linguistic that proved their communication in terms of strategic competence. This also manifest that the learners have advanced knowledge of verbal communication strategies although using non-verbal gestures to converse and give emphasis to their message resulted as the lowest mean, still it was closer in the given indicator employ a variety of motivational approaches which means that learners can manipulate language to meet communicative goals and stimulate the interest of the listeners which gives justice to the lowest mean. This supports the study as mentioned by Green (2011), students need the most extensive authentic practice in strategic communication in-class participation such as taking part in discussions, interacting with peers and teachers, and answering and asking questions. In addition, learners take their oral work seriously and have high expectations of learning through the language and taking some instruction on the more interpersonal aspect of oral communication.

Table 6 presents the overall mean scores of the respondents' perception of their communicative competence levels such as grammar, discourse, sociolinguistic and strategic competence. The highest overall mean is 2.71, grammar competence and the lowest is 2.58 under discourse competence. Furthermore, all computed mean implies that the respondents are advanced in the perceived level of communication competence. The result implies that the learner respondents have a high level of communication competence level. Students believed that the need for competent communication skills is necessary among them, to professionals or even common people for them to be able to convey information effectively.

Table 6

Summary table for communicative competence

Communicative Competence	Overall Mean	Interpretation
Grammar Competence	**2.71**	**Advanced**
Discourse Competence	**2.58**	**Advanced**
Sociolinguistic Competence	**2.68**	**Advanced**
Strategic Competence	**2.63**	**Advanced**

Legend: 3.26 – 4.00 Expert; 2.51 – 3.25 Advanced; 1.76 – 2.50 Basic; 1.00 – 1.75 Needs Improvement

This corresponds to the study of Lent and Brown (2013) cited in Seo (2015) where they expounded that speaking is one of the fundamental skills that give the learner the ability to explicitly express oneself in the target language. It has the functions of maintaining social relationships and transferring information to others. Such ability is necessary since people cannot live without making friends or conveying information about what they want, how they feel, or what they need.

Table 7

Language Usage at Home

Indicators As a student, I…	Weighted Mean	Verbal Interpretation
1. use the English language in communication with the family members.	2.32	Rarely
2. use the English language in answering my module or learning activity sheets (LAS).	3.14	Often
3. watch English movies or TV programs.	3.36	Always
4. listen to English music.	3.62	Always
5. use words correctly to show my stand.	3.11	Often
Composite Mean	**3.11**	**Often**

Legend: 3.26 – 4.0Always; 2.51 – 3.25 Often; 1.76 – 2.50 Rarely; 1.00 – 1.75 Never

It can be seen in table 7 the composite mean of 3.11 having an equivalent verbal interpretation of "often" was the respondents' description of the oral language usage at home. The responses showed that indicator 4 "listen to English music" gained the highest mean score of 3.62 given by the respondents having a verbal interpretation of "always" and the lowest mean score of 2.32 which is the indicator 1 "use the English language in communication with the family members" described in the verbal interpretation of "rarely".

The result proved that most of the learners are rarely using English while communicating with their parents and siblings in their home. Most of them are making use of

the English language at home only in watching movies or listening to music. With very limited factors of using the language maybe not be that sufficient to attain fluency and accuracy of using the English language. Although it can be enriched by just watching or listening to English movies and music, it would be better if it can also be practiced in speaking. This ties with the study of Mazouzi (2013), learners must practice using the English language starting from home. Home activities should be designed based on how they could enhance the usage of the language. Both fluency and accuracy are important elements of the communicative approach. Home practice can help learners develop their communicative competence. The parents should also aim to improve the child's speaking skills.

Table 8

Language Usage Using Different Platforms

Indicators As a student, I…	Weighted Mean	Verbal Interpretation
1. respond to the questions given by my teacher immediately.	2.68	Often
2. voice out what I want to ask most especially if I have questions and clarifications.	2.66	Often
3. assure what my teacher is explaining with regards to the given task in English.	3.20	Often
4. join my partner/groupmates in doing performance tasks in English.	2.97	Often
5. explain my answer clearly to the questions given by my teacher.	3.03	Often
Composite Mean	**2.91**	**Often**

Legend: 3.26 – 4.0Always; 2.51 – 3.25 Often; 1.76 – 2.50 Rarely; 1.00 – 1.75 Never

It can be gleaned from table 8 that the usage of the English language using different platforms gained a composite mean of 2.91 which is given by the respondents' responses. The mean has a verbal interpretation of "often" as to the basis of the usage of the learners. The respondents often use the English language in the given indicator 3 which is "assure what my teacher is explaining with regards to the given task in English" having the highest means score of 3.20 among all the indicators. Meanwhile, indicator 2 "voice out what I want to ask most especially if I have questions and clarifications" has a verbal interpretation of often as well which falls on the least weighted mean score of 2.66.

The result means that the students are often making use of the English language in communication using different platforms measured in their responses. Although the English

language is the major language used as the medium of instruction in many academic subjects, still the mother tongue is being used by both learners and teachers most of the time. The fact that the students may easily understand what the teacher explained to them, still they find it hard to translate everything during class discussion or even in asking queries using the target language since it is very visible to their output submitted though it is in written form. In this context, this supports Lent and Brown (2013) wherein it was mentioned that several features interact to make speaking a challenging language as it is. There are: fluent speech contains reduced forms such as contractions, vowel reduction, and elision, the use of slang and idioms of speech, the students must acquire the stress, rhythm, and intonation of English and the most difficult aspect of spoken English is that it is always accomplished through interaction. Hence, to make the best out of it, learners must take all the possibility to practice the skill (Ritchie, 2011).

Table 9

Language Usage in the Community

Indicators **As a student, I…**	**Weighted Mean**	**Verbal Interpretation**
1. speak English when I socialize with other people.	2.39	Rarely
2. use a correct pronunciation that is acceptable to the majority of my listeners.	2.83	Often
3. amplify my voice to show the stand I am conveying.	2.69	Often
4. express my ideas and opinions when talking to someone.	2.94	Often
5. make clear distinctions between statements that vary in purposes (giving statement, asking a question, requesting/ commanding, and exclaiming).	2.85	Often
Composite Mean	**2.74**	**Often**

Legend: 3.26 – 4.0Always; 2.51 – 3.25 Often; 1.76 – 2.50 Rarely; 1.00 – 1.75 Never

It was revealed in table 9 that the students often use the English language in communicating with the people in the community. Based on their responses, the composite mean score of its usage is 2.74. It was shown that learners often use the English language in indicator 4 “express my ideas and opinions when talking to someone” having the highest weighted mean of 2.94 among all the presented indicators. While indicator 1 “speak English when I socialize with other people” gained the least weighted mean of 2.39 having a verbal interpretation of rarely used.

The result proved that in the community, the students are not using the English language most of the time. This was supported by Wang (2014), who investigated Chinese EFL learners who have some problems in speaking English fluently and accurately because

their speaking competence may be affected by cognitive, linguistic, and emotional factors. Meanwhile, learners express their ideas and opinions when talking to someone.

It is a fact that communication is the most important aspect of human relationships with other people in society or the community. It is the ability to communicate ideas and feelings clearly and effectively. Learning to communicate effectively using the English language is an essential ingredient in a healthy relationship with family, friends, classmates, and associates and becoming fluent in it. This is being supported by Lent and Brown (2013) cited in Seo (2015) when he expounded that communication gives the learner the ability to explicitly express oneself. Communication among people in the community is an essential factor in maintaining social relationships and transferring information. However, learners can express their ideas and opinions when talking to someone.

Table 10

Relationship between grammar competence to the different oral language usage

	R	P-value	Decision	Interpretation
Language usage at home	0.412	0.000	Reject Ho	Significant
Language usage using different platforms	0.539	0.000	Reject Ho	Significant
Language usage in the community	0.586	0.000	Reject Ho	Significant

Legend: $\propto = 0.05$

p > .05 Accept Ho, Not significant

P < .05 Reject Ho, Significant

Table 10 unleashes the relationship between grammar competence and oral language usage.

On the grammar competence vs language usage at home, the computed r-value of 0.412 is greater than the tabular p-value of 0.000 at a 5% level of significance; therefore, the null hypothesis is rejected.

On the grammar competence vs language usage using different platforms, the computed r-value of 0.539 is greater than the tabular p-value of 0.000 at a 5% level of significance; therefore, the null hypothesis is rejected.

On the grammar competence vs language usage in the community, the computed r-value of 0.586 is greater than the tabular p-value of 0.000 at a 5% level of significance; therefore, the null hypothesis is rejected.

The findings imply that the variables grammatical competence and oral language usage have a significant relationship.

Table 11

Relationship between discourse competence to the different oral language usage

	R	P-value	Decision	Interpretation
Language usage at home	0.388	0.000	Reject Ho	Significant
Language usage using different platforms	0.515	0.000	Reject Ho	Significant
Language usage in the community	0.661	0.000	Reject Ho	Significant

Legend: $\propto = 0.05$

p > .05 Accept Ho, Not significant

P < .05 Reject Ho, Significant

The table 11 presents the relationship between discourse competence and oral language usage.

On the discourse competence vs language usage at home, the computed r-value of 0.388 is greater than the tabular p-value of 0.000 at a 5% level of significance; therefore, the null hypothesis is rejected.

On the discourse competence vs language usage using different platforms, the computed r-value of 0.515 is greater than the tabular p-value of 0.000 at a 5% level of significance; therefore, the null hypothesis is rejected.

On the discourse competence vs language usage in the community, the computed r-value of 0.661 is greater than the tabular p-value of 0.000 at a 5% level of significance; therefore, the null hypothesis is rejected.

The result indicates that the variables discourse competence and oral language usage have a significant relationship.

Table 12

Relationship between sociolinguistic competence to the different oral language usage

	R	P-value	Decision	Interpretation
Language usage at home	0.349	0.000	Reject Ho	Significant
Language usage using different platforms	0.499	0.000	Reject Ho	Significant
Language usage in the community	0.607	0.000	Reject Ho	Significant

Legend: p > .05 Accept Ho, Not significant $\propto = 0.05$

P < .05 Reject Ho, Significant

The table revealed the relationship between sociolinguistic competence and oral language usage.

On the sociolinguistic competence vs language usage at home, the computed r-value of 0.349 is greater than the tabular p-value of 0.000 at a 5% level of significance; therefore, the null hypothesis is rejected.

On the sociolinguistic competence vs language usage using different platforms, the computed r-value of 0.499 is greater than the tabular p-value of 0.000 at a 5% level of significance; therefore, the null hypothesis is rejected.

On the sociolinguistic competence vs language usage in the community, the computed r-value of 0.607 is greater than the tabular p-value of 0.000 at a 5% level of significance; therefore, the null hypothesis is rejected.

This means that the variables sociolinguistic competence and oral language usage have a significant relationship.

Table 13

Relationship between strategic competence to the different oral language usage

	R	P-value	Decision	Interpretation
Language usage at home	0.364	0.000	Reject Ho	Significant
Language usage at different platforms	0.529	0.000	Reject Ho	Significant
Language usage in the community	0.622	0.000	Reject Ho	Significant

∝=0.05 *Legend: p > .05 Accept Ho, Not significant*
P < .05 Reject Ho, Significant

The table disclosed the relationship between strategic competence and oral language usage.

On the strategic competence vs language usage at home, the computed r-value of 0.364 is greater than the tabular p-value of 0.000 at a 5% level of significance; therefore, the null hypothesis is rejected.

On the strategic competence vs language usage using different platforms, the computed r-value of 0.529 is greater than the tabular p-value of 0.000 at a 5% level of significance; therefore, the null hypothesis is rejected.

On the strategic competence vs language usage in the community, the computed r-value of 0.622 is greater than the tabular p-value of 0.000 at a 5% level of significance; therefore, the null hypothesis is rejected.

This implies that the variables strategic competence and oral language usage have a significant relationship.

5. Conclusion

This study found the communicative competence levels of the learners as high. Meanwhile, students believed that competent communication skills were required among them, whether they were professionals or ordinary people, to effectively convey information. The respondents proved that they frequently used the English language at home, on different platforms, and in the community. Furthermore, there is a positive and significant relationship between communicative competence and oral language usage. As a result, they were able to accurately apply their communicative competence at home, on different platforms, and in the community.

This study suggests the needs of every learner to enhance their capabilities in communication. It is proven as well that the good communication skills of teachers are the basic need of academic success of students and professional success in the future. This is because the teacher communicates more instructions orally in the classroom to students. Well-developed communication skills are vital to a child's academic success. At all levels of education, students must be able to communicate effectively. Thus, the need to have a set of speaking activities would be of great help for the learners to enhance communicative competence and ensure maximum participation using the target language.

This study suggests that teacher may need to provide resources and materials for the oral communication for the development of the learning tasks that she will offer for the students. The teachers, particularly those who teach English as a medium of instruction, can instruct students on how to learn and practice the language, as well as assist students in becoming independent learners by providing them with the necessary study skills to be able to use and practice their English independently, focusing on all skill areas (reading, writing, speaking, listening), as well as grammar and vocabulary, so students develop across the board. The learners may also be given differentiated oral speaking activities that will help

them enhance their communication skills by using grammatically correct statements. The school may also present projects aimed at improving English language proficiency among all students.

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Teachers' Efficacy With the Use of Technology in Teaching English

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Abstract

This study aimed to examine the common technology being used by the participants, their perceived efficacy level in using technology, and the challenges they face in using those. The research utilized a descriptive method through purposive sampling technique to select the 30 teachers from different private schools in San Pablo City during the Academic Year 2020-2021. A researcher-made questionnaire was used in gathering data. The respondents identified smartphone as hardware device they commonly used while the software apps commonly used were zoom as videoconferencing software app, web browsers as reference software app, and social networking sites as forum software apps. On the other hand, the respondents perceived that they have high level of efficacy with the use of hardware devices. They also have high level of efficacy in using each type of software apps (videoconferencing software, reference software, and forum software). In addition, the result showed four major challenges they faced in using technology; keeping up with changes, fixing troubleshoots, slow internet connection, and lack of familiarity. The results lead to the development of a guidebook, titled "Hi Teach" which may be put into evaluation and validation process to determine its possible strength to be utilized in different classroom purposes.

Keywords: *technology, hardware devices, software apps, efficacy level. TPACK, guidebook*

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1. Introduction

Technology gives educators an immediate access to abundance of quality information which leads to students' learning at a much quicker rate than before. This is with the desire to advance technologically literate workforces and to be able to participate in the information societies and economies of the present and future. In the Philippines, the Department of Education (DepEd) allocates budget that will supply schools computers, fast internet service, digital devices and software for the use of students in order for the country not to be left behind. These significant investments, in both hardware and software, also seek to see significant usage of these technologies in teaching and learning process. Despite increasingly all-embracing of technologies in every aspect of education, significant challenges are intercepting its effective implementation. Philippine Information Agency Calabarzon (2020) also reported that key among all the challenges is the lack of adequation, specifically insufficient training with the use of technologies in teaching. Besides, there are many available resources but teachers seem to have become the scapegoat for the failure of technology integration to live up to its promises. Some of these accusations are lack of creativity and innovativeness, limited technological skills, and unwillingness to adapt new teaching methods.

The problems are really evident since there are only limited trainings that teachers are exposed to. Many hardware devices and software application are being introduced to them but they cannot make full use of these since they do not know how to operate them. Moreover, it is also important to consider English language since it is the principal means of communication and it co- exists with technology, as cited by a linguist, Ferdinand de Saussure (2018). In fact, all new technology introduces new English words and concepts. Transmission of information happens inside technology and it uses English language.

This study measured the efficacy level of English teachers in using technologies and in this research, technologies are in two forms, the hardware devices and software application. Hardware devices are physical devices which one is able to touch, such as cell phones, tablet, computer, and laptop. On the other hand, software applications are programs that can be used to do specific tasks such as videoconferencing software apps, reference software apps, and forum software apps. Videoconferencing software apps are those that hold

real time conference such as Zoom, Google Meet, Skype, Microsoft teams, and the like. On the other hand, forum software apps are those that allow users to work interactively and collaboratively, like Kahoot, Discussion Board, Google Classroom etc. Lastly, references apps are apps that offer factual content and information such as blogs, websites, etc. Moreover, this study identified the problem that the respondents are facing in using these two major types of technologies and by that, the researcher was able to develop a guidebook that would somehow aid the teachers' utilization of technology integration. The researcher also believes that this guidebook would help to bridge the gap between the laggard, late adapters, and traditional teachers.

2. Literature review

2.1. Teachers' Self-Efficacy

The teacher's role has a tremendous impact on the learning process of students. Basically, teachers are vital for the success or failure of an educational system; they administer the policies of an education system on the ground. Thus, Clemeno (2015) said that the more capable the teachers are, the more productive is the educational system. If the teachers are competent, they will positively affect students' performance. Teachers' self-efficacy, namely teachers' beliefs in their ability to effectively handle the tasks, obligations, and challenges related to their professional activity, plays a key role in influencing important academic outcomes (e.g., students' achievement and motivation) and well-being in the working environment as what Digno (2013) stated that self-efficacy is also related to the product of activities used in the classrooms. If teachers execute the task successfully, self-efficacy will increase while low levels of teachers' self-efficacy lead to failure. Furthermore, Emmitt (2014) uttered that the most forceful root of self-efficacy information is said to be the mastery level experiences of an individual, which one experiences directly. If a person completes a given task, it means that self-efficacy beliefs are being upgraded positively and adjust their teaching strategies when faced with difficulties (Warner, 2020).

2.2. Technologies

Refinement in institutions as huge as education should move quickly. Educators should establish in pleasant and traditional practices as we are today faced with amazing challenges of the 21st century. Thus, it is significant to welcome new practices in education

(Rowe, 2015). Technology integration nowadays has gone through innovations and transformed societies that has totally changed the way people think, work and live (Grabe, 2017).

Integration of technology in education refers to the use of computer-based communication that is incorporated into daily classroom instructional processes (Salleh, 2019). Albrini (2018) described that the aim of technology integration is to improve and increase the quality, accessibility and cost-efficiency of the delivery of instruction to students. It also refers to benefits from networking the learning communities to face the challenges of current globalization. But beyond basic skill training, schools had used a diversity of strategies to provide additional professional development for teachers.

2.3. Hardware Devices

Gadgets have penetrated many aspects of life and industry, yet there is little understanding of how it can be used to promote student engagement, a concept receiving strong awareness in higher education due to its alliance with a number of positive academic outcomes (Morad, 2017). Nevertheless, Sayadian (2015) said that some faculty may be doubtful to use technology due to lack of technical knowledge and/or suspicion about the efficacy of technology to improve student learning outcomes. In addition, Keenan (2018) viewed that even university administrators may see technology as a tool to attract and retain students, faculty however may struggle to determine how technology coincides with existing pedagogy.

On the other hand, technology hardware such as computers, video, and audio were purposely made for language learning and those which adapt existing computer-based materials, videos, and other resources (Dela Rosa, 2016). More enlightened gadgets such as smartphones, tablets, laptops, etc., can be used to assist students in retrieving information from the web, transforming it, transferring it, collaborating with students and also creating a more media-rich approach to instruction (Reeves, 2017).

2.4. Software Applications

In a research conducted by Fule (2014), it was mentioned that students need to be active, independent learners but teachers should build them up to this, and in order to build

them up, traditional mode of teaching will no longer suit the needs of our generation but what they need is an advanced way of learning. Thus, Zhen (2016) assert that applications on computers or phones have many advantages in English teaching, such as offering more information, saving more time, stimulating students' imagination and creativity, and so on. Learning these applications can be challenging for educators who are not technicians, especially in an online learning environment (Hsu, 2105). Thus, Leshea (2013) suggests acceptance of distance education continues to grow, there will be an increased urging for quality online learning classes that are more readily available to students across the globe. Videoconferencing (VMC) is a progressively popular way of co-working on one's own on physical distance (Friesen, 2016). Nevertheless, many teachers are struggling on the use of these applications, especially those who just see some of their features for the first time (Paule, 2019). On the other hand, Polio (2017) stated that the utilization of recorded films and news articles take part in crucial roles in teaching second language. Communication through forums also enables collaboration over a period of time through a different time-different place mode. Hayton (2016) gave emphasis that social networking sites is a very hot area of communication within young people's lives at the moment, so it makes sense for language teachers to get involved and have fun on it.

Software applications have need of minimal technical skills, and it allows private communication between the instructor and student. Broadcasts for intense class announcements can be sent via email. Assignments can be easily attached, and instructors can supply almost immediate response to students (Carlson, 2015). However, Merill (2019) said that students may begin to depend too heavily on the instructor for one-on-one instruction or for information about assignments and material already available on the course site. Therefore, it is important to set guidelines for asynchronous tools used within the course syllabus.

The itemized facts about the different forms of technologies figured out that technology is indeed meaningful in teaching English as a second language. Some studies also highlighted that as English teachers, it is a must to alleviate their efficacy level using different educational technologies, hence making it a focal point of teaching plans should be realized. Further, most literature presented, nearly all of these strengthen that technologies play a great role in the teaching and learning process so teachers need to improve their skills in using those

to cater the needs of all learners, during and even after this current situation. Some studies suggest that by attending training and seminars then educators will be able to adapt towards technology use, to be open-minded, and to be up-to-date with technological advancements.

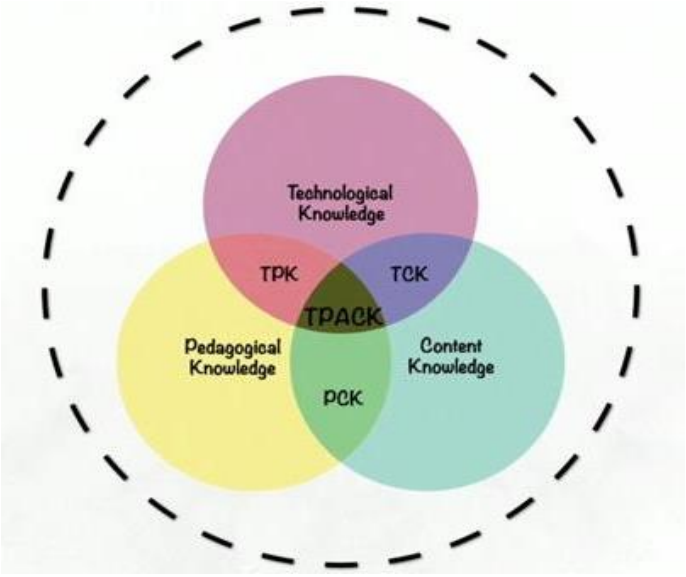
2.5. Theoretical framework

This study was anchored on Technological Pedagogical Content Knowledge (TPACK) theory by Punya Mishra and Matthew J. Koehler (2006). This theory gives a new framework for the integration of technology in education and how educators can structure classrooms to provide the best educational experience for students while incorporating technology. It is a theory that was developed to explain the set of knowledge that teachers need to teach their students with the use technology. Pedagogical and content skills are believed to be within the teachers already thus this theory only emphasizes the integration of technology. TPACK forms with each of the content areas here and their interactions. It is the knowledge of how the teacher uses the technology related to a specific area to enhance students' understanding.

The theory guided the study since this determines the importance of technological knowledge along with the pedagogical and content skills of teachers. Moreover, the two general types of educational technology presented in this theory were the factors to consider in order to gather the needed data. These types of technology determine the technology being used by the respondents, their technological skills through their perceived efficacy level, and the challengers they are facing in using those.

Figure 1

Theory of Technological Pedagogical Content Knowledge (TPACK) by Punya Mishra and Matthew J. Koehler (2006)



Source:https://www.google.com.ph/search?q=tpack+theory&authuser=0&sxsrf=APqWBtLhLWHqslqda0QvlptM2UxBl84_w:1646811255038&source=lnms&tbm=isch&sa=X&ved=2ahUKEwjKgPnwbj2AhUGwJQKHWuqB84Q_AUoAXoECAEQAw&biw=1366&bih=625&dpr=1#imgrc=HcsL2SamTL19CM

3. Methodology

The study utilized the descriptive method of research. As defined by Signer (2019), descriptive studies report summary data such as measures of central tendency including the mean, median, and mode, deviance from the mean, variation, percentage, and correlation between variables. In relation, the present study summarized the data, specifically the perception of the participants using mean and standard deviation. Moreover, Robinson (2018) said that this method uses survey research which commonly includes that type of measurement, but often goes beyond the descriptive statistics in order to draw inferences. Educational researchers might use observational, survey, and interview techniques to collect data about group dynamics during computer-based activities. This is appropriate to the present study since a survey questionnaire will be applied in order to obtain the needed data.

The study used purposive sampling to determine the respondents of the study; thirty (30) junior high school English teachers, out of 49, from different private schools in San Pablo City in the school year (2020-2021). Hernandez (2018) explains that purposive sampling technique is applicable when researchers have prior knowledge about the purpose of a study so that they can properly choose and approach eligible participants. In this study, the researcher considered all private schools and teachers but only those who gave their consent became the study participants. In addition, the researcher chose only English teachers from private schools since they have background knowledge about the experiences of educators in terms of educational technology.

To gather the needed data and information to answer the research problem, the study used descriptive survey method utilizing questionnaire as the instrument. Gamaro (2015) defines a survey questionnaire as a research instrument consisting of a set of questions or prompts that aim to collect information from a respondent. The researcher consulted various data gathering tools in framing the questionnaire, wherein some parts were adopted and modified to align with the present study. The questionnaire is composed of three parts. The first part consisted of a checklist of technologies wherein the participants checked the technologies they commonly use in teaching. The second part focused on the participants' perception of their efficacy level using technologies. The respondents considered their answers in the first part, the most commonly used technologies, in answering this part. They determined their efficacy level using the categorized types of technologies. Each type of

technology consisted of 10 items and 20 overall, from which the participants were asked to choose and check from numbers 1-4 according to how they perceived each given indicator. The last part was an open-ended question that the participants needed to identify the common challenges they face using technologies.

To test the reliability, same set of participants answered set of questions. After few weeks, the same set of questions was given to them. These two sets of measures were correlated and attained high correlations ($r = 0.7$). The survey tool also had content and face validation of three English/research teachers who have been teaching English and research subjects for more than ten years in their respective schools and were recognized for their excellence in different pedagogical aspects. In addition, these teachers have experience teaching both online and in actual classroom discussions. While teaching online, these validators were able to make use of different technologies.

In order to gather the needed data for this study, the study considered several phases.

The first phase of the procedures focused on seeking approval from the School Heads of different private schools in San Pablo. The researcher personally went to eight (8) private schools. However, due to the current situation, only 4 of the school heads were met by the researcher; thus, they permitted the researcher to conduct the study. The researcher went back to other schools. The researcher talked to the guard and some staff but said they are not permitting researchers from other schools. Fortunately, teachers from two (2) schools were available; thus, they gave the email address of their principals. Staff from one of the private schools also gave their principal's email address. As the researcher received the accounts of the school head, she promised that all of these accounts would be kept confidential. The researcher sent endorsement letter through social media and the academic head of the school permitted the conduct the study. In contrast, some schools did not respond despite multiple follow-ups. Furthermore, an email was sent to the principals and directress of some of these private schools. Two principals replied and approved the endorsement letter, but the other gave no response regardless of frequent follow-ups. Overall, the nine (9) private schools in San Pablo granted the request to conduct the study in their respective school.

The second phase focused on distributing the questionnaire to the participants upon securing the needed approvals. The questionnaire was both in Google form and paper. One school preferred to answer the survey in paper. In comparison, some of the participants in two schools answered the survey in the Google form and could access the link from their

school heads since this was also provided in the endorsement letters. Other school heads decided to give the email accounts of the English teachers; thus, the researcher sent the letter to the respondents with the link to the survey. The letters assured that all teachers' accounts and responses would be kept private and treated with strict confidentiality. Moreover, it was also stated that if they did not agree to be the study respondent, then they have a chance not to continue answering the form.

A three-day interval collection of data was compromised between the researcher and the respondents. The school, which decided to answer the survey in paper, had responses ready one week after distribution. Some teachers could answer the form one to three days after the distribution. However, some participants did not respond to the letter sent to their email accounts; thus, a follow-up letter was sent to them. Fortunately, the participants responded to the survey form three days after the follow-up. All in all, 30 participants answered the survey questionnaire.

To facilitate the comparative analysis and interpretation of data, the study used frequency count and percentage distribution, mean and standard deviation and thematic coding.

4. Findings and Discussion

Table 1 displays the hardware devices commonly used by the respondents in delivering the lesson, particularly the computer, tablet, smartphones, and laptop. Majority of the respondents are using smartphones and has a frequency of 21 out of 30, covering 70 % of the participants. On the other hand, none of the participants uses tablet as their tool in teaching.

Table 1

Distribution of Respondents with the use of Hardware Devices

Edtech Tools	Frequency	Percentage	Rank
Computer	1	3.33 %	3
Tablet	0	0 %	4
Smartphones	21	70 %	1
Laptop	8	26.67 %	2

The result implies that great number of participants consider smartphones as the major gadget in teaching. This can be associated to the preferences of the participants in choosing gadget to use, most of them are using gadget which they believed to be more convenient. This matches to the argument of Erickson (2018) that icons, functions, and animations in smartphones are easy to remember and understand thus many are using this gadget. Moreover, the result shows that most participants are using smartphones since these are user-friendly. This implication is tallied on what Villeno (2017) said that in other gadgets like tablet and computer, when some people encounter trouble they still have to consult an IT expert in order to resolve it but in smartphones simple tricks can be done by the users themselves. By this, teachers need assistance that will simply give them guidelines about the different functions and basic troubleshooting guide in using hardware devices.

Table 2

Distribution of Respondents with the use of Videoconferencing Software Apps

Edtech Tools	Frequency	Percentage	Rank
Zoom	26	86.67 %	1
Google Meet	4	13.33 %	2

Table 2 shows the videoconferencing software apps used by the participants as to Zoom, Google Meet, Skype, Microsoft Team Apps, Class In, and School Personal LMS. Majority of the participants are using zoom and has frequency of 26 out of 30 (86.67 % of all the participants). This is followed by Google meet since 4 out of 30 are using this platform. None of the participants are using the School Personal LMS, Skype, Class In and Microsoft Teams.

The result implied that there are only limited platforms which are known by the participants that can be linked to limited knowledge due to lack of exposure to variety of platforms. This corresponds to the justification of Coman (2021) that teachers choose limited E-learning tools because they are lack of knowledge using those due to the short time in which they had to adapt their teaching style to the new conditions. Also, how to use these platforms. On the other hand, the dominantly used platform is zoom since these are easily available and user friendly which corresponds to Shanen (2019) as he described that the overall growth in usage of some web conferencing tools is reflected on how friendly the tool

is. He added, that in education, the faculty and instructors choose app based on how it is being use to augment course delivery and the improvement in communication with and between students.

Table 3

Distribution of Respondents with the use of Reference Software Apps

Edtech Tools	Frequency	Percentage	Rank
Blogs	2	6.67%	3
Web browsers	24	80%	1
Ebooks	3	10 %	2
Online Courses	1	3.3 %	4

Table 3 presents the reference software apps used by the participants such as blogs, webpages, EBooks, and online courses. Twenty-four (24) out of thirty (30) participants are using Web browsers, covering 80% of the whole population. Two of the participants use blogs thus it has a 6.67% of the total population, 3 use eBooks, and 1 use online courses.

The result pointed out that most of the participants are commonly used only web browsers like Google chrome, Microsoft internet explorer, opera, etc. which can be associated to how teachers see how a friendly the app is. This correlates to the statement of Sofi (2018) that many believe that webpages are friendly since in a single click, content are readily available and easy to access.

Table 4

Distribution of Respondents with the use of Forum Software Apps

Edtech Tools	Frequency	Percentage	Rank
Discussion Board	1	3.33 %	4
Social Networking Sites	17	56.67 %	1
Google Classroom	4	13.33 %	3
V-bulletin	0	0	5.5
Discourse	0	0	5.5
phpBB	0	0	5.5
Simple Machines Forum	0	0	5.5
XenForo	0	0	5.5
School Personal LMS	8	26.67 %	2

Table 4 shows the participants' way of delivering the lesson using forum software apps. To specify these are discussion board, social networking sites, Google classroom, v-bulletin, discourse, phpBB, simple machines forum, xenForo, school personal LMS. 17 or 56.67 % of the participants are using social networking sites and none of them uses V-Bulletin, Discourse, Phpbb, Simple Machines Forum, and Xenforo.

The result justifies that the participants are using social networking sites like Facebook, Instagram, Twitter, etc. as major apps to make the discussion engaging. This can be linked to the familiarity of the participants to apps they are using. Thus, it corresponds to what Madrid (2021) uttered that social networking sites are unique communication tool since this allow people to create their own contents, to express their thoughts on an issue, and to post their ideas about their own personal life freely. In understanding the problem, introduction of other forum apps must be considered.

Aragones (2020) explained that when the pandemic started and this online learning was introduced, many platforms were introduced by different institutions. This is compatible to the result which also signifies that even though multiple platforms were introduced to the teachers, still they only consider the ones which are familiar to them. Therefore, there is a need to explain how other reference software apps can be utilized in teaching and the output of this study will give them additional details on how to make use of them.

Table 5 shows the perception of the respondents in hardware devices such as computers, laptop, smartphones, and tablet. Result presents that the highest mean is 3.53, interpreted as strongly agree, was found in no. 1 which states the efficacy level of the respondents in knowing what device processors use or techniques to try to produce good audio and video quality which helps them as an English teacher to deliver the content effectively. On the other hand, the lowest mean 3.23 (agree) fell under number 2, which states the efficacy level of the teachers' participants in editing audio in a specific device to make it clearer so it makes English teaching meaningful.

The result means that the respondents are knowledgeable in considering the processor of a device they are using in order to produce a good quality of audio and video and by that learners will be more engaged with the lesson. This associates to the justification of Mateo

(2016) that students are much more engaged when videos and audios used by the teachers are clear enough to understand.

Table 5

Participants' Perceived Efficacy Level with the use of Hardware Devices

Indicators	Mean	SD	Verbal Interpretation
1. Know what device processors use or techniques to try to produce good audio and video quality which helps me as an English teacher to deliver the content effectively.	3.53	0.68	Strongly Agree
2. Edit audio and video in a specific device to make it clearer so it makes English teaching meaningful.	3.23	0.73	Agree
3. Provide high HD quality videos from a high definition device which guides me on the fulfillment of the real purpose of English lessons.	3.30	0.60	Agree
4. Know the skills of good video and audio production to convey English content and ideas to the learners.	3.47	0.57	Agree
5. Organize video and audio content from laptop, cellphone or other devices which makes a good English teaching.	3.50	0.51	Strongly Agree
Average	**3.41**	**0.62**	**Agree**

Legend: *3.50 – 4.00 Very High; 2.50 – 3.49 High; 1.50 – 2.49 Low; 1.00 – 1.49 Very Low*

On the other hand, the lowest mean in the statement 2 pointed out that some respondents couldn't produce clearer videos or audio if they still have to edit and mix them. Hence, dealing in a more complicated tasks such as editing and mixing videos/audios using certain gadget are quite challenging for the respondents. But, Sung et al. (2016) said that using gadgets in producing good instructional materials have great potential for facilitating more innovative educational methods thus this must be pondered.

Table 6

Participants' Perceived Efficacy Level with the use of Hardware Devices

	Overall Mean	Interpretation
I. Hardware Devices	3.41	High level of efficacy

Legend: *3.50 – 4.00 Very High; 2.50 – 3.49 High; 1.50 – 2.49 Low; 1.00 – 1.49 Very Low*

Table 6 shows the overall mean of the respondents' efficacy level using hardware devices. The computed mean implies that the respondents have high level of efficacy in using hardware devices. The result also signifies that all teachers believe that they can make use and control different types of hardware devices specially cellphone, laptop, and computer. This can be linked to the things that teachers are very much exposed to. Therefore, it corresponds to what Flores (2019) said that gadgets play a significant role in the common man's life and we have grown so used to it that it becomes very difficult for us to think of daily life chores in the absence of these gadgets.

Table 7

Participants' Perceived Efficacy Level with the use of Videoconferencing Software Apps

Indicators	Mean	SD	Verbal Interpretation
1. Navigate all commands and features in video conference platforms which makes the English discussion interactive and lively.	3.40	0.62	Agree
2. Maintain proper distance and position from the camera or speaker which affects the interaction and communication in English discussion.	3.50	0.51	Strongly Agree
3. Check technical equipment to be used in video conferences both software and hardware which creates a meaningful communication and discussion in English class	3.37	0.61	Agree
4. Adapt to non-verbal communication while having a conference which helps the students to communicate their ideas and thoughts.	3.37	0.61	Agree
5. Fix troubleshoot when platform freezed and stopped working to maintain spontaneous discussion.	3.30	0.70	Agree
Average	**3.40**	**0.61**	Agree

Legend: *3.5-4 Strongly Agree (Very High Level of Efficacy); 2.5-3.49 Agree (High Level of Efficacy); 1.5-2.49 Disagree (Low Level of Efficacy); 1-1.49 Strongly Disagree (Very Low Level of Efficacy)*

Table 7 reveals that the respondents have a high level of efficacy when it comes to videoconferencing software apps with an average mean of 3.40. Respondents perceived that statement 2, "maintain proper distance and position from the camera or speaker which affects the interaction and communication in English discussion." as highest among the items with a

mean of 3.50 and interpreted as strongly agree while the least perceived statement was number 5, “fix troubleshoot when platform froze and stopped working to maintain spontaneous discussion”.

The results implied that most number of the respondents can maintain proper distance and position from the camera or speaker which affects the interaction and communication in a discussion which is actually one of the most essential skill that teachers should know when conducting virtual session whereas Gordon (2020) emphasized that Videoconferencing platform has a number of unique features that sometimes it is too hard to focus on other things such as the quality of the camera. On the other hand, fixing problem when encountered in a platform being used seems to be challenging for the respondents. It signifies that it is a harder task since it requires more complex skills which corresponds to LeShea (2013) who described that some teachers are struggling to fix problems in conferencing tools like when they freeze and stop working. The results clearly showed that the teachers are much more confident in basic skills like improving the video and audio quality than dealing in a more complex tasks that they need some guidance in doing these.

Table 8

Participants’ Perceived Efficacy Level with the use of Reference Software Apps

Indicators	Mean	SD	Verbal Interpretation
1. Operate asynchronous materials like films, eBooks, etc. that helps me to communicate the context and content of different English factual and literary pieces.	3.40	0.67	Agree
2. Look, search or check information online that supports English teaching effectively.	3.47	0.77	Agree
3. Research information, for example, seeking support of a lecturer through email, search engines, online resources and it makes English teaching meaningful since content are based on factual information.	3.40	0.56	Agree
4. Ensure links work properly and content is correct and updated. Thus, these avoid communication breakdown.	3.33	0.71	Agree
5. Validate information, document delivery request, online assessment, email, online surveys which encourage transaction between me and my students.	3.27	0.57	Agree
Average	**3.37**	**0.66**	**Agree**

Legend: *3.5-4 Strongly Agree (Very High Level of Efficacy); 2.5-3.49 Agree (High Level of Efficacy); 1.5-2.49 Disagree (Low Level of Efficacy); 1-1.49 Strongly Disagree (Very Low Level of Efficacy)*

The table 8 shows the perception of the respondents with the use of reference software apps. The least computed mean 3.27, interpreted as agree was found in no. 7 which states that the respondents' efficacy level in validating information, document delivery request, online assessment, email, online surveys which encourage transaction between me and my students. In contrast, the highest mean 3.47, interpreted as strongly agree was found in no. 2 which states the efficacy level of the participants in looking, searching or checking information online that supports English teaching effectively.

This shows that the participants can highly search information online in different platforms or webpages. This justified the argument of Hassett et al. (2014) that as a cost effective and accessible communications tool, webpages like Google, Mozilla Firefox, Microsoft internet explorer, etc. makes a significant impact as references across educational institutions since their features are easy to use. Although, all computed mean show that the respondents have high level of efficacy, the lowest mean signify some respondents are not into validating information they got from different sources. It is evident that most participants are into fundamental platforms rather than more complicated platform. However, as what described by Diaz (2020) should consider many references so they can transform their role from information provider to facilitator and make students more independent learners. Consequently, Santos (2020) also emphasized that using different online sources can diminish the effects of bias—the preference of one view over another.

Table 9
Participants' Perceived Efficacy Level with the use of Forum Software Apps

Indicators	Mean	SD	Verbal Interpretation
1. Create, publish, edit, add, or delete information on public forums which guides me to deliver the English context fast and clear.	0.40	0.62	Agree
2. Develop forums in different apps which encourages interaction and participation among students.	0.37	0.61	Agree
3. Initiate good topics in a forum app which allows the exchange of ideas among English learners.	0.57	0.68	Strongly Agree
4. Employ forum apps after every discussion which promote interaction where English is use too often.	0.33	0.55	Agree
5. Involve multiple forum apps in a discussion which help the learners to be engaged, specifically in learning English.	0.23	0.57	Agree
Average	**0.38**	**0.60**	**Agree**

Legend: 3.5-4 Strongly Agree (Very High Level of Efficacy); 2.5-3.49 Agree (High Level of Efficacy); 1.5-2.49 Disagree (Low Level of Efficacy); 1-1.49 Strongly Disagree (Very Low Level of Efficacy)

Table 9 shows the perceptions of the respondents with the use of forum software apps. It presents that highest mean 3.57, interpreted as strongly agree, was found in statement no. 3, which states the efficacy level of the participants in initiating good forum topics which allows the exchange of ideas among English learners. On the contrary, the lowest mean 3.23, interpreted as agree, fell under number 5 which states the efficacy level of the participants in involving multiple forum apps in a discussion which help the learners to be engaged, specifically in learning English.

The result implies that most respondents are good to in constructing good forum topic but they are only considering the use of one or limited apps instead of using several. This contradicts to what Wahyuningsih (2020) said that an integration of numerous apps in activity like forums must be considered in teaching since this can be a disruptive learning innovation in education. Loveless (2021) added that teachers should make use of multiple apps with them how to integrate those in teaching, since they may have difficulty in getting children to pay attention during the discussion thus students may find they are curious about a particular subject if teachers will consider different apps.

Table 10
Participants' Perceived Efficacy Level with the use of Software Apps

Indicators	Overall Mean	Interpretation
I. Videoconferencing Software Apps	3.40	High level of efficacy
II. Reference Software Apps	3.37	High level of efficacy
III. Forum Software Apps	3.38	High level of efficacy

Legend: 3.50 – 4.00 Very High; 2.50 – 3.49 High; 1.50 – 2.49 Low; 1.00 – 1.49 Very Low

Table 10 shows the overall mean of the respondents' efficacy level using software devices. The highest overall mean is 3.40 under Videoconferencing software apps, followed by 3.37 mean of reference software apps, and lastly the 3.38 mean of forum software apps. Furthermore, all computed mean imply the respondents have high level of efficacy using software apps.

The result also signify that the participants can integrate different apps in teaching since they have high level of efficacy. Likewise, they see the importance of these apps in teaching and learning process thus they know that it is important to know the basic knowledge about those. Moore (2015) said that positive teacher-efficacy is essential for

effective instructional technology integration. Sure (2019) added that self-efficacy has repeatedly been reported as a major component in understanding the frequency and success with which individuals use technology It can be postulated that teachers' beliefs regarding their capacity to work effectively with technology in general are directly related to their integration of technology in teaching. Consequently, the measurement of technology self-efficacy is a useful indicator of teacher education programs' effectiveness in preparing graduates to use instructional technology (Hayes, 2017). Nevertheless, there are some indicators, especially those which are complex, among different types of technology that received lower ratings from the teacher thus additional guidelines must be given to them.

Table 11

Common Challenges being faced by the Participants with the Use of Technologies in Teaching

Challenges	Frequency
Keeping up with changes	
1. Satisfied with the use of traditional method	1
2. It is hard to adapt with current trends in gadgets and all about technology.	1
3. Technology is not always a teacher's preference like me.	1
4. Many apps are not aligned in the lesson.	1
Fixing troubleshoots in gadget and apps	
1. Maintenance is expensive, especially with the use of personal computer.	1
2. Sometimes, I lost my student's work because of the error system, and I don't know how to fix it because it is not my field.	1
3. We didn't really use our LMS last year because of all the upgrades and no support. For example, if you turn it on and it doesn't work, I can't figure it out and we won't use it.	1
4. There are some information that I cannot upload nor deletein a system, I am having a hard time to fix problems like that.	1
5. I often encounter trouble in my computer especially in CPU and I still have to go to shop to fix it.	1
6. There are technical problems/issues that I encounter in using technology.	3
7. Technology makes our life easier but there are times that it also a cause of delay especially if it just stopped working, I had an experience last year wherein my laptop just stopped working and I do not know what to do.	1
Slow internet connection	
1. Poor internet connections	5
2. Not all schools and even homes have liable and fast internet connection	3
Lack of familiarity	
1. I can see many icons and buttons but I do not know how these work.	1
2. There are many features of apps/devices that needed to be explored in order for them to function well.	1
3. I do not know some apps that I may use in teaching.	1
4. I have heard and seen many apps to use in teaching but I do not know how to appy it.	1
5. Overflowing trends in technology though I am not familiar yet to the old ones	1
6. There are many things to learn like the icons and some features	1
7. Some apps are very hard to operate	3

Table 11 displays the challenges that the participants are facing using technologies. It was identified that there are four major challenges and these are keeping up with changes, fixing troubleshoots in gadgets and apps, slow internet connection, and lack of familiarity. Majority of the respondents, covering nine (9) out of 30 respondents, said they are having a hard time to fix technical issues and they are also not familiar with some features of apps. This can be associated with the lack of technical support who will assist them whenever they encounter trouble thus it corresponds on the argument of Buenafe (2020) that even after teachers' initial fear of getting involved with technology has been overcome, serious challenges remain in terms of providing enough technical support that teachers will not be discouraged by equipment failures or software behaviour they do not understand.

The result can also be linked to teachers' lack of knowledge and exposure to different types of technology. This is similar to the reasoning of Cannaman (2019) that technology cannot be effective in the classroom without teachers who are knowledgeable about both the technology itself and its implementation to meet educational goals and therefore while technology use in the classroom is increasing, improving teachers' skills using technology should remain the goal. Aside from the two challenges mentioned above, the two other challenges identified were keeping up with changes and slow internet connection. This can be connected to teachers acceptance of technology and what Ramos (2015) said that traditional method of teaching is still at its significance that it increases interaction among students and provides more conducive environment to learn with fellow students. On the other hand, one of the major problem as well is the slow internet connection hence technology cannot be fully implemented unless there is a high-speed of connection. According to Gathcalian (2020), the basic education sector's recovery should accelerate efforts in expanding access to both internet connectivity and gadgets for learning.

5. Conclusion

This study finds only limited technology which are being known and used by most of the participants. While the teachers have high level of efficacy with the use of technologies, they may need to be provided with guidelines that will help them to explore and be well-equipped with technologies. As such, teachers may explore other types of technology that

may be used in a more engaging and lively interaction. Nevertheless, it also recommended to sustain the use of technology which the respondents are already using.

The results of the analysis enabled the researcher to elicit an in-depth understanding on the significant of providing guidelines to the teachers to make full use of technologies. The integration of technologies inside the classroom was dependent to the participants' acceptance of technology, the devices and apps they know, how familiar they are in different types of technology, reliable internet connection, and how to solve basic troubleshoots while using them. Well-integrated use of technology resources by thoroughly trained teachers makes learning successful.

Integration of technology allows teachers to effectively deliver the lesson in classroom, whether actual or virtual. Since then, technology is an essential tool that makes communication and information-sharing possible. Determining teachers' effectiveness in using technology will also determine if the technology integration is successful or not. Although, there are many new trends when it comes to technologies, teachers are still using limited form of technology. In this matter, providing they more trainings and guidelines in order to be knowledgeable and well-equipped with technologies must be taken into account.

Outline of the Hi Teach (A Guidebook Using Educational Technology)

Different guidelines such as ways to embrace new technology; introduction of different types of technology with definitions, getting started, more tips and tricks, basic troubleshooting guide, and additional information via video link; and discovery of some apps that can be used even without internet connection in teaching were all incorporated in this guidebook based from the findings of the study.

The ways to embrace new technology were based on the identified challenge of the participants to keep up with the changes. Introduction of different types of technology with definitions, getting started, more tips and tricks, basic troubleshooting guide, and additional information via video link was based on the challenge of the participants to be familiar with them and to fix common technical issues. Lastly, the presentation of different apps that can be used even offline was based on the challenge of slow internet connection.

Furthermore, aside from the challenges identified by the participants, some significant findings also direct the initiation of some parts of this guidebook. The definitions and getting

started guide were based on the findings of educational technologies used in teaching. In this paper, it was identified that the participants are using limited educational technologies although there were many technologies to consider. Providing them the list of multiple technologies with definitions and how to start using those will guide the teachers to explore and choose other platforms that would help them to facilitate learning.

On the other hand, more tips and tricks and additional information by accessing the video link were based on the teachers' perceived efficacy level that teachers seemed to be challenged with more complex tasks than to those basic ones. Thus by giving them additional details to make full use of educational technology will allow them to be more familiar with other features and functions of educational technologies.

Lastly, the basic troubleshooting guide was based on the findings under the teachers' perceived efficacy level using hardware devices, that most teachers are a certain gadget only since most of them found this gadget friendly and this is the only gadget which they can easily fix the troubleshoot. In other gadgets, most of them are having hard time to make use of them, since if they will encounter problem they still have to consult an IT expert.

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Physical Activity Domains and Teaching Effectiveness in the New Normal

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Abstract

This study determined the relationship between physical activity domains and the teaching effectiveness of teachers in the new normal in the City Schools Division of Cabuyao, Laguna, Philippines in 2021-2022. The respondents of the study were 79 female and 26 male teachers determined through simple random sampling technique with 4% margin of error. Date gathered using validated researcher-made survey questionnaire were analyzed using arithmetic mean, standard deviation, and Spearman's Rank-Order correlation. The study found a low positive association between physical activity domains and teachers' teaching effectiveness in the new normal. The direction and level of correlation between the independent and dependent variables are both positive implying that there is, at the very least, a relationship between physical activity and teaching quality. Hence, physical activity and quality of teaching are directly proportional. Findings also suggest that teacher's effectiveness depends on their teaching methods, lesson plans, classroom management, and student learning time while physical activity is only a small part of a teacher's job. While the findings suggest physical activity has low impact on teaching, this study still suggest teachers to be physically active in their day-to-day routines and be proactive in taking steps to help them remain physically fit in order to reduce the stress, mental disorders, and emotional suffering.

Keywords: *Physical Activity Domains, Teaching Effectiveness, New Normal Education, Correlation*

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1. Introduction

Several studies linked students' academic achievement to numerous factors such as teacher competence (Podungge et al., 2019; Fauth et al., 2019; Nbina, 2012) student interest (Arhin & Yanney, 2020; Sauer, 2012) lesson design (Ayra & Kösterelioğlu, 2021); learner capacities (Beharu, 2018), learning environment (Olufemi, 2018), school facilities and equipment (Olugbenga, 2019; Ramli & Zain, 2018; Ekundayo, 2012) among others. However, the teacher is still the primary factor affecting students' academic achievement (Siachifuwe, 2017; Sakız1, 2015; Sirait, 2016; Anwar & Nawaz, 2020; Obilor, 2019). For instance, teachers plan to verify lesson alignment and target learning gaps before teaching. In addition, helping students discover essential standards, digest new content, practice and enhance reasoning abilities, and compare similarities and contrasts would boost academic performance. A few of a teacher's professional responsibilities for enhancing each student's education include initiating efforts to learn more, improve teaching, reach new heights in teaching and learning, and engage in physical activities that enhance mental processes and enable teachers to have more precise and better ideas, judgment, and decisions. As Terada (2019) quips, teachers are the key to educational achievement given their multitude of tasks. However, the teachers' physical and mental health are at stake (Salinas-Falquez et al., 2022; Aperribai et al., 2020; Jimenez, 2021; Sebastian, 2017; De Simone et al., 2016).

Physically active persons have better sleep, better daily functioning, higher mental performance, a lower risk of dementia, and improved musculoskeletal and bone stability and endurance (Physical Inactivity, n.d.). However, during the COVID-19 outbreak, teachers worldwide, including the Philippines, became inactive. Aperribai et al. (2020) indicated that one reason educators are physically inactive during pandemic is increased stress from lockdown workload. Even though teachers' work performance and daily routines were affected by lockdown, community quarantine, hybrid work arrangements, and lack of access to regular physical activity, student learning is still reflected in assessment outcomes, problem-solving skills, and attitudes. Accordingly, teachers need physical activity to actively perform their duties (Sebastian, 2017; De Simone et al., 2016). Researches argue that physical activity makes people more productive, less fatigued, less bored, and invigorated. Hence, teachers are encouraged to have physical exercise at home.

While there are studies focused on teaching effectiveness (i.e. Petrila et al., 2022; Chaturvedi et al., 2021; Taja-on et al., 2021) and teachers' physical activity during the pandemic (i.e. Fontana et al., 2022; Aperribai et al., 2020; Özcan & Sarac, 2021), there are only few studies correlating the physical activity of teachers and their teaching effectiveness (i.e. Fontana et al., 2022). There are also very limited correlational studies on physical activity and teaching effectiveness in the Philippine setting. Hence, this study assesses the relations of physical activity domains on the teaching effectiveness in the new normal in the City Schools Division of Cabuyao, Laguna, Philippines during the Academic Year 2021–2022. Because the pandemic has prompted a movement away from traditional learning in the classroom and toward online learning, it is crucial to understand how physical exercise helps teachers be more effective in their teaching. This study provides important insights into how physical activity can contribute to the teaching effectiveness of in the new normal.

2. Literature Review

More than one-fourth of the world's adult population is insufficiently active (Physical activity, n.d.). Consequently, Skrebutnait and Karanauskiene (2019) found that inactive people frequently experienced physical and psychological health difficulties as a result of their inactivity. Individuals with disabilities are less physically active than adults without impairments (Hassett et al., 2021) and they report differing physical activity profiles and restrictions. In contrast, Shin et al. (2018) found that middle-aged people are less likely to participate in physical activity and are more likely to experience unhealthy aging than younger or older adults. As identified by Dumlao-Abadilla (2017), physical inactivity is caused by a lack of time due to work (57%), lack of personal motivation (47%), modern life diversions (47%), lack of accessible sports and leisure venues (36%), and other critical impediments (45%).

Researchers emphasized the advantages of engaging in any type of physical activity. For example, Coelho-Ravagnani et al. (2021) stressed that physical activity improves physical, mental, and social well-being. Similarly, Asiamah and Mensah (2017) found physical activity as an effective treatment for depression, which is a common condition among workaholics or people who work for extended periods without a little bit of relaxation, such as teachers in the new normal. According to experts, physical jobs had a

decreased risk of depression. According to Dias et al. (2017), physical activity improves the elderly's functioning, cognitive performance, and risk of falling. Physical activities such as bicycling and gardening provide a number of substantial health benefits for individuals (Piatkowski & Bopp, 2021; Grontved et al., 2019; Bopp et al., 2018; Ma et al., 2021; Veldheer et al., 2021). However, Temporelli (2021) underlined the harmful impacts of high occupational physical activity in the workplace. It has been linked to negative health outcomes such as cardiovascular disease, work absences due to illness, and death from any cause.

In terms of the teaching profession, Apperribai et al. (2020) found teachers who engage in regular physical exercise reported significantly higher levels of job satisfaction as well as higher levels of perceived health and physical fitness. Findings showed that participating in regular physical activity is a significant contributor to both the general well-being and performance of teachers. It was also discovered that lecturers who participated in greater physical activity reported higher levels of job satisfaction, improved perceptions of their own health, and enhanced levels of physical fitness as compared to lecturers who did not participate in any physical activity. White et al. (2018) revealed that physical activity and intellectual health aided in the improvement of teachers' mental function. Hence, physical activity should be seen as an important part of a teacher's work-life balance, which may improve teacher's overall job satisfaction.

In the study of Bogaert et al. (2014), the levels of physical activity teachers engage in are connected with both their physical and psychological health outcomes. There was a correlation between higher levels of physical activity and better results in terms of physical health, such as improved cardiovascular health, reduced body mass index, and lower levels of depression, anxiety, and stress. On the other hand, lower levels of physical activity were connected to poorer physical outcomes, such as higher levels of depression, anxiety, and stress, as well as higher body mass indices and blood pressures. The research also discovered that engaging in physical activity was connected with better self-reported outcomes for psychological health, such as lower levels of stress, anxiety, and depression. The findings clearly indicated that the amount of physical exercise that teachers engage in should be considered significant for both their physical and psychological wellbeing.

In terms of teaching, findings from the research conducted by Zinsser et al. (2016) indicated that unmet student needs may be a potentially major source of stress for teachers. As the found that the availability of supports and resources to meet the needs of children may have an impact on teachers' well-being, it is common for a student's instructor to be the first person to recognize that anything is amiss and take action in response to the situation when the student is exposed to traumatic events at home or does not have adequate resources to succeed in the classroom. It is possible for a teacher to experience a sense of powerlessness when it comes to meeting the needs of a particular student when there are insufficient student support services available at the school or no systems in place to connect students with the necessary services available in the community. Another possibility is that the teacher will become the major support system for the student. Both of these situations put a strain on the instructor's emotional resources. Amparo (2018) notes that effective teaching entails having a good impact on a student's life, in turn students' academic performance usually evaluates a teacher's teaching effectiveness (Alrefaee & Al-Ghamid, 2019).

Given the arguments and premises presented, this study argues that physical activity helps improve the teaching effectiveness. Hence, the higher the physical activity, the more teaching effectiveness is achieved.

3. Methodology

This study adopted the quantitative method, non-experimental research with observational approach, and a descriptive-correlational design. The simple random sampling technique with a 4% margin of error was used to select 105 respondents, consisting twenty-six (26) male and seventy-nine (79) female teachers from different subject specializations such as Filipino, English, Mathematics, Science (Chemistry, Biology, Physics, General Science etc.), Social Studies, Values Education, Technology and Livelihood Education (TLE), and Music, Arts, Physical, and Health Education (MAPEH) with age ranges from 21 to 64 years old. These teachers were not on leave in any case and currently performing their sworn job.

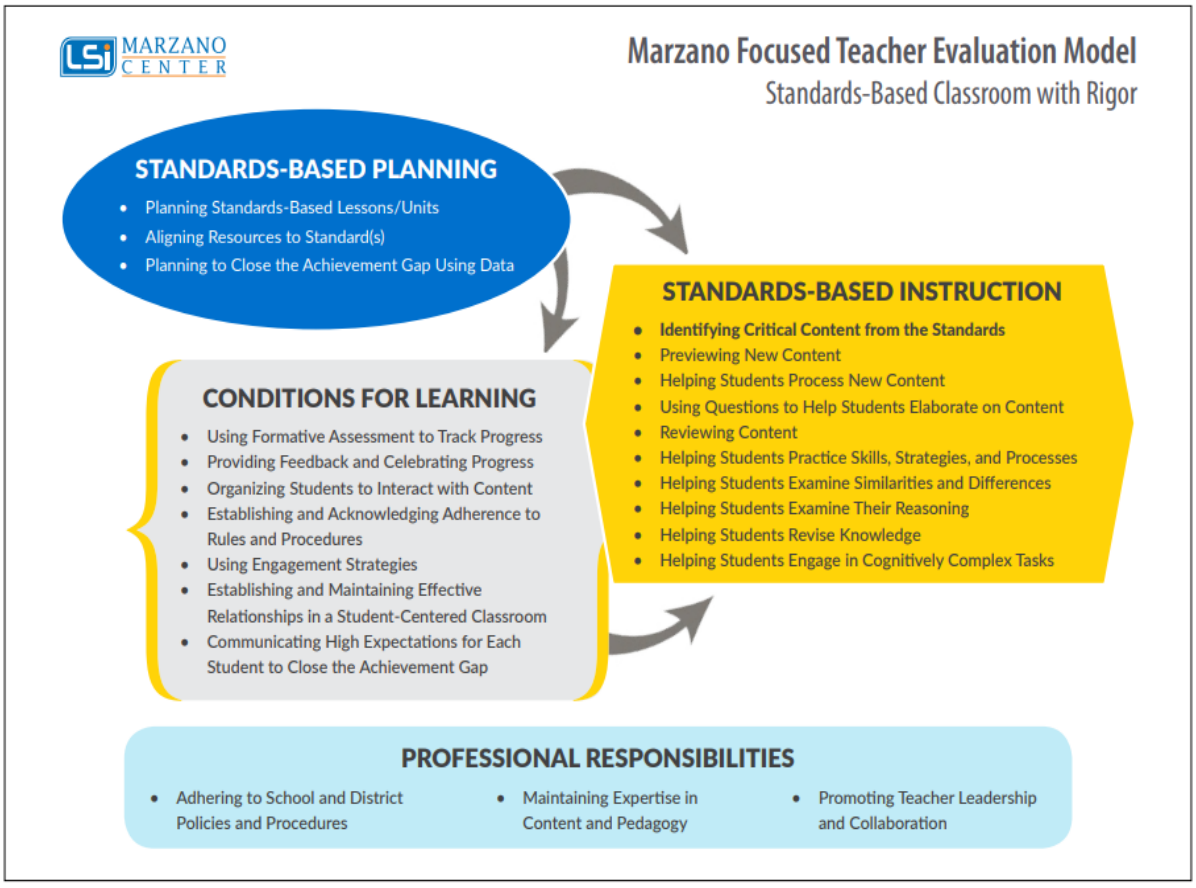
The instrumentations used in the study were both adapted from Booth (2015) and Marzano et al. (2021). The former is the International Physical Activity Questionnaire with four domains such as job-related activity, transportation physical activity, housework, house

maintenance and caring for family and recreation, sport and leisure-time physical activity composed of 11 items while the latter is the Focused Teacher Evaluation Model with 23 essential elements in four domains such as standards-based planning, standards-based instruction, conditions for learning, and professional responsibilities. Both survey questionnaires were rated with 5-point Likert scale of (5) Always, (4) Frequently, (3) Sometimes, (2) Seldom and (1) Never.

The study was anchored on Marzano's Focused Teacher Evaluation Model (FTEM) highlighting calculable teacher behaviours and capacities into 23 crucial manners to quantity effectiveness within four domains of expertise: standards-based planning, standards-based instruction, conditions for learning, and professional responsibilities shown in figure 1.

Figure 1

The Marzano's Focused Teacher Evaluation Model (2021)



Source: Marzano, R. et al. (2021). The Marzano Focused Teacher Evaluation Model. Learning Sciences International. https://www.learningsciences.com/marzano-framework/teacher-evaluation/

This study used convergent validity, a type of construct validity, to ensure that the results matched the intended outcome (Middleton, 2022). Pearson r was used to determine each item's validity by correlating it to the total items, and each instrument item was valid.

The study used Cronbach's Alpha to analyze internal consistency. The reliability of the items in Focused Teacher Evaluation questionnaire showed standards-based planning (a = 0.9117, n = 18, 3 items), standards-based instruction (a = 0.9121, n = 18, 10 items), conditions for learning (a = 0.8654, n = 18, 7 items), and professional responsibilities (a = 0.8577, n = 18, 3 items) had very high reliability. Meanwhile, the International Physical Activity Questionnaire's reliability testing showed job-related/occupational activities (a = 0.8540, n = 18, 3 items) with high reliability, transportation physical activity (a = 0.6993, n = 18, 2 items) with quite high reliability and household chores, house maintenance, and family caring (a = 0.7684, n = 18, 3 items) with high reliability. Furthermore, Kolmogorov-Smirnov Data normality showed teaching effectiveness (p=0.001) and physical activity (p=0.004) are not normally distributed.

To proceed with data gathering, a letter seeking permission for the conduct of the study was sent to the Schools Division Superintendent. Upon acceptance, a Google form questionnaire was sent to the teachers virtually through email and social media platforms. An ample time was given to them to reflect before they answered. Google form automatically collected responses in a spreadsheet. The study's results were examined using a statistical method to prove or disprove the null hypothesis.

As to data analysis, mean and standard deviation were used to examine teacher-respondents' physical activity involvement as well as teaching effectiveness. Spearman's Rank order correlation was used to test significant relationship between the physical activity domains and teaching effectiveness. It is a statistical method for determining the strength of the association between two variables, however it is important to follow the research ethical guidelines to make sure the results are trustworthy. It can be used to show a strong association between different kinds of physical activity and the quality of a teacher's lesson, although it can raise some ethical concerns. The physical activity data, for instance, must be gathered in a responsible fashion. Participant understanding of the study's goals and potential dangers is essential for getting their informed consent. Furthermore, researchers need to be alert to the possibility of data bias and take measures to reduce it. Moreover, the study's

ramifications should be taken into account. Considering how to put the results of a Spearman's Rank Order Correlation between physical activity domains and classroom performance in practice is crucial if those results prove to be positive. This research should not be utilized to draw broad conclusions, such as that exercise has no influence on teacher performance. Instead, the results of this study should be used to shape and direct future investigations into this topic.

4. Findings and Discussion

Table 1 explains the level of physical activity involvement of teacher-respondents in different domains such as occupational, transportation/utilitarian, domestic and leisure time.

Table 1

The Level of Physical Activity Involvement of Teachers

Statement	M	SD	Interpretation
1. I engage in vigorous physical activity for at least 75 to 150 minutes per week, like climbing upstairs, cleaning the classroom, chairs, tables, windows as part of my work.	4.10	0.71	High Level
2. I do moderate physical activities for at least 150 to 300 minutes per week, like sorting self-learning modules and weekly home learning plan or carrying light loads as part of my work. (Walking is excluded.)	4.13	0.69	High Level
3. I walk for at least 10 minutes at a time as part of my job. *(Please exclude any walking you did to and from work.)*	4.22	0.72	High Level
Occupational Domain	**4.15**	**0.63**	**High Level**
4. I travel using a bicycle for at least 10 minutes at a time to go from place to place.	2.96	1.50	Average Level
5. I walk for at least 10 minutes at a time to go from place to place.	3.97	0.99	High Level
Transportation/Utilitarian Domain	**3.47**	**1.08**	**Average Level**
6. I do vigorous activities like heavy lifting, chopping wood, shoveling soil, or digging in the garden or yard.	3.37	1.28	Average Level
7. I do moderate activities like carrying light loads, sweeping, washing windows, and ranking in the garden or yard.	4.05	0.87	High Level
8. I do moderate activities like carrying light loads, washing windows, scrubbing floors, and sweeping inside my home?	4.13	0.77	High Level
Domestic Domain	**3.85**	**0.84**	**High Level**
9. I walk for at least 10 minutes at a time in my leisure time.	4.11	0.84	High Level
10. I do vigorous physical activities like aerobics, running, fast bicycling, or fast swimming in my leisure time.	3.48	1.19	Average Level
11. I do moderate physical activities like bicycling at a regular pace, swimming at a regular pace, and doubles badminton in my leisure time.	3.33	1.30	Average Level
Leisure time Domain	**3.64**	**1.00**	**High Level**
Overall Level of Physical Activity Involvement	**3.75**	**0.79**	**High Level**

Legend: 4.50 – 5.00 Very High Level, 3.50-4.49 High Level, 2.50-3.49 Average Level, 1.50-2.49 Low Level, 1.00-1.49 Very Low Level

In occupational domain, the mean values of the indicators concerning physical activity involvement range from 4.10 to 4.22. The statement with the highest mean is "*I walk for at least 10 minutes at a time as part of my job*" (x = 4.22, SD = 0.72) with an interpretation "High Level". It means that the majority of the respondents had a high extent of agreement that they engage themselves to at least 10-minute walk at a time as part of their job. Nevertheless, the statement with the least mean is "*I engage in vigorous physical activity for at least 75 to 150 minutes per week, like climbing upstairs, cleaning the classroom, chairs, tables, windows as part of my work*" (x = 4.10, SD = 0.71) with interpretation of "High Level" as well. It means that least of them had a high extent of agreement that they engage in vigorous physical activity for at least 75 to 150 minutes per week, like climbing upstairs, cleaning the classroom, chairs, tables, window as part of their work. Overall, the respondents' perceived level of physical activity involvement in occupational domain falls to "High Level" (x = 4.15, SD = 0.63).

In transportation/utilitarian domain, the mean values of the indicators concerning physical activity involvement range from 2.96 to 3.97. The statement with the highest mean is "*I walk for at least 10 minutes at a time to go from place to place*" (x = 3.97, SD = 0.99) with an interpretation "High Level." It means that most of the respondents had a high extent of agreement that they walk for at least 10 minutes at a time to go from place to place. Nevertheless, the statement with the least mean is "*I travel using a bicycle for at least 10 minutes at a time to go from place to place*" (x = 2.96, SD = 1.50) with interpretation of "Average Level". It means that least of them had an average extent of agreement that for them to go to from place to place, they travel using a bicycle for at least 10 minutes at a time. Overall, the respondents' perceived level of physical activity involvement in transportation/utilitarian domain falls to "Average Level" (x = 3.47, SD = 1.08).

In domestic domain, the mean values of the indicators concerning physical activity involvement under domestic domain range from 3.37 to 4.13. The statement with the highest mean is "*I do moderate activities like carrying light loads, washing windows, scrubbing floors, and sweeping inside my home*" (x = 3.97, SD = 0.99) with an interpretation "High Level". It means that most of the respondents had a high extent of agreement that they do moderate activities like carrying light loads, washing windows, scrubbing floors, and sweeping inside their home. Nevertheless, the statement with the least mean is "*I do vigorous*

activities like heavy lifting, chopping wood, shoveling soil, or digging in the garden or yard" (x = 3.37, SD = 1.28) with interpretation of "Average Level." It means that least of them had an average extent of agreement that they do vigorous activities like heavy lifting, chopping wood, shoveling soil, or digging in the garden or yard. Overall, the respondents' perceived level of physical activity involvement in domestic domain falls to "High Level" (x = 3.85, SD = 0.84).

In leisure time domain, the mean values of the indicators concerning physical activity involvement under domestic domain range from 3.33 to 4.11. The statement with the highest mean is "*I walk for at least 10 minutes at a time in my leisure time*" (x = 4.11, SD = 0.84) with an interpretation "High Level". It means that most of the respondents had a high extent of agreement that they walk for at least 10 minutes at a time in my leisure time. Nevertheless, the statement with the least mean is "*I do moderate physical activities like bicycling at a regular pace, swimming at a regular pace, and doubles badminton in my leisure time*" (x = 3.33, SD = 1.28) with interpretation of "Average Level." It means that least of them had an average extent of agreement that they do moderate physical activities like bicycling at a regular pace, swimming at a regular pace, and doubles badminton in my leisure time. Overall, the respondents' perceived level of physical activity involvement in leisure time domain falls to "High Level" (x = 3.64, SD = 1.00).

The overall level of physical activity involvement of teacher-respondents in all domains falls to "High Level" (x = 3.75, SD = 0.79). These results are congruent with Sunda et al. (2021) on the variations of physical activity levels by job experience, with younger teachers being more active than their older counterparts. Similarly, Brito et al. (2012) also found that educators aged 31 to 42 had higher low physical activity levels than teachers aged 55 to 66, older teachers were less active, and male teachers had higher levels of low physical activity than female teachers. The results also confirm Atan et al. (2012) that teachers' levels of physical activity increase with age. Marriage and gender also affect teaching. These are characterized by the respondents exercise 75-300 minutes per week (low to moderate) and walk at least 10 minutes for work, travel, and leisure. They also carry lightweight loads, sweep, wash windows, scrub floors, and sweep inside their homes.

Table 2 shows that as per standard-based planning, the mean values of the indicators pertaining to teaching effectiveness range from 4.38 to 4.57. The statement with the highest

mean is "*I plan standards-based lessons/units*" (x = 4.57, SD = 0.58) with an interpretation "Very High Level". It means that most of the respondents had a very high extent of agreement that they plan standards-based lessons/units. Nevertheless, the statement with the least mean is "*I plan to close the achievement gap using data*" (x = 4.38, SD = 0.56) with interpretation of "High Level". It means that least of them had a high extent of agreement that they plan to close the achievement gap using data. Overall, the respondents' perceived level of teaching effectiveness of teachers in standards-based planning falls to "Very High Level" (x = 4.50, SD = 0.48).

Table 2

The Level of Teaching Effectiveness of Teachers

Statement	M	SD	Interpretation
1. I plan standards-based lessons/units.	4.57	0.52	Very High Level
2. I align resources to standard(s).	4.54	0.56	Very High Level
3. I plan to close the achievement gap using data.	4.38	0.56	High Level
Standards-based Planning	**4.50**	**0.48**	**Very High Level**
4. I identify critical content from the standards.	4.34	0.59	High Level
5. I preview new content.	4.50	0.56	Very High Level
6.I help students process new content.	4.55	0.52	Very High Level
7. I use questions to help students elaborate on content.	4.63	0.54	Very High Level
8. I review content.	4.61	0.53	Very High Level
9. I help students practice skills, strategies, and processes.	4.53	0.54	Very High Level
10. I help students examine similarities and differences.	4.56	0.54	Very High Level
11. I help students examine their reasoning.	4.54	0.56	Very High Level
12. I help students revise their knowledge.	4.48	0.57	High Level
13. I help students engage in cognitively complex tasks.	4.46	0.59	High Level
Standards-based Instruction	**4.52**	**0.45**	**Very High Level**
14. I use formative assessment to track progress.	4.58	0.53	Very High Level
15. I provide feedback and celebrate progress.	4.46	0.59	High Level
16. I organize students to interact with content procedures.	4.47	0.56	High Level
17. I use engagement strategies.	4.50	0.59	Very High Level
18. I establish and maintain effective relationships in a student-centered classroom.	4.58	0.52	Very High Level
19. I communicate high expectations for each student to close the achievement gap.	4.31	0.59	High Level
Conditions for Learning	**4.34**	**0.57**	**High Level**
20. I adhere to school and district policies and procedures.	4.46	0.47	High Level
21. I maintain expertise in content and pedagogy.	4.62	0.53	Very High Level
22. I promote teacher leadership and collaboration.	4.52	0.57	Very High Level
Professional Responsibilities	**4.56**	**0.55**	**Very High Level**
Overall Level of Teaching Effectiveness	**4.57**	**0.48**	**Very High Level**

Legend: 4.50 – 5.00 Very high, 3.50-4.49 High, 2.50-3.49 Average, 1.50-2.49 Low, 1.00-1.49 Very low level

In standards-based instruction, the mean values of the indicators pertaining to teaching effectiveness range from 4.34 to 4.63. The statement with the highest mean is "*I use questions to help students elaborate on content*" (x = 4.63, SD = 0.54) with an interpretation

"Very High Level". It means that most of the respondents had a very high extent of agreement that they use inquiries to assist students elaborate on content. Nevertheless, the statement with the least mean is "*I identify critical content from the standards*" (x = 4.34, SD = 0.59) with interpretation of "High Level". It means that least of them had a high extent of agreement that they identify critical content from the standards. Overall, the respondents' perceived level of teaching effectiveness of teachers in standards-based instruction falls to "Very High Level" (x = 4.52, SD = 0.45).

In conditions for learning, the mean values of the indicators pertaining to teaching effectiveness of teachers range from 4.31 to 4.58. The statements with the highest mean are "*I use formative assessment to track progress*" (x = 4.58, SD = 0.53) and "*I establish and maintain effective relationships in a student-centered classroom*" (x = 4.58, SD = 0.52) both with an interpretation "Very High Level". It means that most of the respondents had a very high extent of agreement that they use formative assessment to track progress and they establish and maintain effective relationships in a student-centered classroom. Nevertheless, the statement with the least mean is "*I communicate high expectations for each student to close the achievement gap*" (x = 4.31, SD = 0.59) with interpretation of "High Level". It means that least of them had a high extent of agreement that they communicate high probabilities for every student to close the achievement gap. Overall, the respondents' perceived level of teaching effectiveness of teachers in conditions for learning falls to "High Level" (x = 4.34, SD = 0.57).

In professional responsibilities, the mean values of the indicators pertaining to teaching effectiveness of teachers in terms of responsibilities range from 4.46 to 4.62. The statement with the highest mean is "*I maintain expertise in content and pedagogy*" (x = 4.62, SD = 0.53) with an interpretation "Very High Level." It means that most of the respondents had a very high extent of agreement that they maintain expertise in content and pedagogy. Nevertheless, the statement with the least mean is "*I adhere to school and district policies and procedures*." (x = 4.46, SD = 0.47) with interpretation of "High Level." It means that least of them had a high extent of agreement that they adhere to school and district policies and procedures. Overall, the respondents' perceived level of teaching effectiveness of teachers in professional responsibilities falls to "Very High Level" (x = 4.56, SD = 0.55).

The overall level of teaching effectiveness of teacher-respondents in all areas falls to "Very High Level" (x = 4.57, SD = 0.48). This shows that teachers are very much capable of lesson planning and aligning resources to standards. They are also well-versed in using formative assessments, integrating engagement strategies, and establishing and maintaining effective relationships in a student-centered classroom. Moreover, they are very much open to maintain expertise in content and pedagogy, and very much willing to promote teacher leadership and collaboration. These characteristics are mentioned in the study of Stronge et al. (2015) that effective teachers plan well, use appropriate materials, convey goals to students, sustain a quick pace, frequently assess student work, and employ a range of teaching styles. They maximize class time and offer well-coordinated instruction. However, Fernández et al. (2019) found female teachers had better learning environments than male teachers and managed the classroom better. Certainly, there were discrepancies between less and more experienced teachers (those with fewer than ten years of expertise) (those with between 21 and 30 years of experience). Less experienced teachers rated higher learning atmosphere, classroom management, instruction clarity, differentiation, and teaching methods. Highly experienced teachers had better classroom management and instructional clarity (those with more than 30 years of experience). Moderately experienced teachers (11-20 years) had better classroom management and instruction.

Table 3

The Significant Relationship between the Physical Activity Domains and the Teaching Effectiveness of Teachers

Variables	Spearman Correlation	p-value
Physical Activity Domains and the Teaching Effectiveness	0.304**	0.002

Legend: Significant if p<0.05; 0.90 to 1.00 Very high correlation, 0.70 to 0.90 High correlation, 0.50 to 0.70 Moderate correlation, 0.30 to 0.50 Low Correlation, 0.00 to -0.30 No correlation (Jaadi, 2019)

Table 3 shows the results of the Spearman Rho Correlation of the ordinal variables that the probability value was less than the level of significance ($p < 0.01$). Thus, the null hypothesis was rejected. It signifies that physical activity domains and the teaching effectiveness have positive low correlation (Correlation=0.304, p=0.002). However, even if the direction and level of correlation between the independent and dependent variables are both positive, this implies that there is, at the very least, a relationship between physical activity and teaching quality. It has been discovered that physical activity and quality of

teaching are directly proportional. In other words, as the importance of physical activity increases, so does the need of high-quality teaching. Simply said, any form of physical activity a teacher participates in has a positive impact on both the mind and the body of an individual. These results are congruent with Bogaert et al. (2014) that fostering physical activity in an autonomy-supportive manner may be a beneficial method for improving teachers' health. Giving teachers the knowledge, understanding, awareness, and motivation they need to live a physically active lifestyle may be helpful to their health. Similarly, Meyer (2016) mentioned that when educators are well, they are efficient, and students do better. Though, the association between teaching effectiveness and student academic achievement was shown to be weak in the study of Lee (2018), the results show that teachers are not the only determinant in student academic improvement.

5. Conclusion

This study found physical activity domains and the teaching effectiveness had a low positive correlation. This implies there is a substantial association between different areas of physical activity and the efficiency with which one teaches, as physical activity is simply one aspect of the job of a teacher. While the effectiveness of a teacher can be attributed to a number of factors such as the instructional tactics they use, the quality of their lesson plans, the quality of their classroom management, and the amount of time they devote to the learning of their students, the presence of physical exercise affects the task performance. This study suggest that physical activity induces teachers to perform their functions with energy and clear mind.

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Addressing Students Learning Gaps in Mathematics through Differentiated Instruction

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Abstract

The study aimed to determine if differentiated instruction effectively addresses learning gaps in mathematics. In particular, it explored how it can improve the student's learning gaps concerning mathematical performance and confidence. The study employed a quasi-experimental design with 30 purposively-selected Grade 10 participants divided into differentiated (n = 15) and control groups (n = 15), ensuring the utmost ethical measures. The mean and standard deviation were used to describe the participants' performance and confidence. Independent samples t-tests were used to determine the significant differences in the performance and confidence between the two groups. In contrast, dependent samples t-tests were used to determine the significant differences in each group's pre and posttest performance and confidence. Findings bared that the differentiated instruction successfully addressed students' performance in mathematics even in a short period. It also increased the participants' confidence when answering fundamental problems. Continuing differentiated instruction activities are recommended since it benefits students who struggle in mathematics, particularly in answering fundamental operations. Differentiated teaching activities in mathematics can boost academic achievement and engagement and prepare students for future success while fostering a positive and inclusive classroom culture that values individual learning needs and preferences.

Keywords: *action research, confidence, instructional intervention, mathematics education*

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1. Introduction

Mathematics is a critical subject taught in elementary and secondary education that provides students with fundamental knowledge and skills to organize their lives (Ariyanti & Santoso, 2020). Unfortunately, the COVID-19 pandemic has exacerbated the current education crisis and widened the learning gap in mathematics among young students (Sooknanan & Seemungal, 2023). The situation has led to a decline in math learning, as students may need more remediation to progress to new lessons, leading to learning gaps (Torres, 2021). However, schools and teachers take steps to address this issue, such as implementing differentiated instruction, providing additional support to struggling students, and leveraging technology to facilitate remote learning. Despite the challenges, it is essential to prioritize efforts to close the learning gap in mathematics, ensuring that the students have the knowledge and understanding for their academic and future careers.

Differentiated instruction is a strategy that can effectively meet the diverse needs of all students, leading to improved student achievement (Parsons et al., 2018; Valiandes & Neophytou, 2018). This approach considers learners' unique strengths and differences in today's classrooms and provides them with hands-on learning opportunities (Civitillo et al., 2016). When teaching mathematics, differentiated instruction promotes greater student engagement and interaction among classmates (Mbugua & Muthomi, 2014). However, successfully implementing differentiated instruction is crucial to achieving the intended results (Deunk et al., 2018). Additionally, since differentiated lessons are organized from fundamental to complex competencies, it is essential to ensure learners have a firm grasp of fundamental skills before moving on to more advanced competencies. Failure to do so may create learning gaps that hinder students' ability to master new skills and concepts in future lessons (Torres, 2021). Despite these challenges, differentiated instruction remains valuable for improving student outcomes in mathematics and other subjects.

Mathematics plays a crucial role in developing students' logical thinking skills. To promote effective mathematical learning, teachers must consider various factors, including students' confidence in mathematics (Azucena et al., 2022; Kunhertanti & Santosa, 2018). However, capturing the necessary type of confidence in mathematics is challenging, as students' overall assessments of their confidence in mathematics or specific topics within the mathematics curriculum may not accurately reflect their actual confidence (Foster, 2016).

Many recent studies on children's mathematics success have focused on self-confidence, which is considered one of the most critical psychosocial factors affecting student performance (Hosein & Harle, 2018; Çiftçi & Yıldız, 2019). Before the pandemic, the Philippines faced challenges in mathematics education and ranked lowest in international assessments (San Juan, 2019). In the PISA 2018 International Report, Filipino students' average score in mathematical literacy was 353 points, significantly lower than the Organization for Economic Cooperation and Development (OECD) average of 489 points, indicating a below Level 1 proficiency (OECD, 2019). The Philippines also scored 297 in math in the 2019 Trends in International Mathematics and Science Study (TIMSS) by the International Association for the Evaluation of Educational Achievement (Mullis et al., 2019). It is necessary to deal with the problem of students' confidence in mathematics and develop effective strategies to enhance mathematics education in the Philippines.

By doing so, students can better develop their mathematical thinking and problem-solving skills, leading to improved performance in mathematics and other academic areas. Tabon National High School was founded in 2016, and the mean average from the start ranged from 82 to 85 percent before the pandemic. The mean average during the pandemic for the last two years was 84 percent. Students need help to answer their modules, but because modular distance learning was used, students can seek assistance from their parents or relatives while answering or browsing the internet. When there is a pilot test for face-to-face classes for the last month before the school year ends last S.Y. 2021-2022. During the one-month pilot testing, teachers worried about their interest in a particular topic. They need help remembering what lessons they have studied in their module. They cannot even grasp and recall their homework, but the school ensures their learning. Teachers are fully aware of the decline in education that has occurred to them when classes resume for the school year 2022-2023. Because of the pandemic, all students' learning gaps widened. Their learning gaps were most noticeable in mathematics, where most needed help solving integer-base problems or equations. Nevertheless, it can be addressed through an intervention (Azucena et al., 2022; Pentang et al., 2020; Pentang, 2021).

The school sought more interventions to bridge the gap and achieve students' learning outcomes, especially during the transition to face-to-face classes. The priorities and action steps include expanding the implementation of limited face-to-face classes, identifying

learning gaps, and profiling and clustering learners based on learning needs. Developing learning time is one of the strategies to address learning gaps and accelerate learning (Suprayogi, 2017). Other instructional strategies, such as peer tutoring, problem-based learning, and gaming, may be used in differentiated instruction (Altemueller & Lindquist, 2017; Smale-Jacobse et al., 2019). Differentiated instruction was chosen to help students recover quickly, bridge learning gaps, and improve academic performance. The confidence was added to understand the level of difficulty that they have while answering. Differentiated instruction was used because teachers knew how capable those students were; their potential could not be ignored. Even though 90 percent of the population is indigenous, they are potentially good academically. Due to several factors, including the pandemic, learning losses have grown and must be addressed. As a result, tailored interventions have been created to help students overcome the learners' academic difficulties and confidence in mathematics.

The study determined if the differentiated instruction intervention effectively addresses learning gaps in mathematics for Grade 10 students. The following null hypotheses were tested:

1. There is no significant difference in the pretest and posttest scores between the differentiated instruction group and the control group for Grade 10 students in mathematics.
2. There is no significant difference in the pretest and posttest scores within both the differentiated instruction group and the control group of Grade 10 students in mathematics.
3. There is no significant difference in confidence levels between the differentiated instruction group and the control group of Grade 10 students in mathematics.

2. Literature Review

2.1. Level of Mathematics Achievement

Mathematics is believed as the foundation of scientific-technological information, precisely dynamic in the economic growth of a nation. The most critical component relates to an individual's success (Tomlinson, 2014), yet, learners' achievement in mathematics has

been declining over the years, as the results released by PISA and TIMMS (OECD, 2019; Mullis et al., 2019). This has been attributed to many circumstances similar to insufficient teaching and learning facilities, learners' weak demeanor toward mathematics and student incompetence to relate and comprehend the problem in the time assigned to finish the task (Van Geel et al., 2019). Shifting from traditional instruction practices, mathematics educators share an idea of what methods are more practical to address the issue, like the constructivist approach, mastery learning, and systematic approaches. Studies have shown Filipino students' poor or unsatisfactory performance in mathematics (Azucena et al., 2022; Capuno et al., 2019; Pentang et al., 2020). Additionally, the National Achievement Test mean percentage score in Mathematics was below the standards (DepEd, 2019). The students' mathematics underachievement can be attributed to the COVID-19 pandemic, affecting both teachers and students. This study tried to address these concerns at Tabon National High School by employing differentiated instruction.

2.2. Differentiated Instruction in Mathematics

Different creative instruction techniques in the way that differentiated instruction are used to raise mathematics achievement (Kyriakides et al., 2018; Schleicher, 2016; UNESCO, 2017). Differentiation entails tailoring instruction to address the needs of each individual, where teachers have made a difference in subject matter, procedures, outputs, and student experience (Wilkinson & Penney, 2014; Smale-Jacobse et al., 2019). The idea behind differentiated instruction is that educational strategies should change and be tailored to the unique needs of each student in a classroom instead of expecting students to modify themselves for the curriculum (Roy et al., 2013; Tomlinson, 2014; Tomlinson, 2015). The differentiated instruction model calls for teachers to adapt and be flexible in teaching methods, curriculum, and informational delivery to learners (Mbugua & Muthomi, 2014).

The quality of differentiated instruction provided by the teacher and the systematic use of differentiated instruction methods in mixed-ability classrooms in promoting equity, optimizing quality, and teaching effectiveness significantly impact students' achievement (Peteros et al., 2020). With the implementation of the K-12 mathematics curriculum by the Department of Education, educators have created primary learning objectives for all students to help them think critically, logically, and positively; since differentiated instruction is planned and deliberated to enhance students' mathematics understanding and learning to

improve their critical thinking skills (Bhagat et al., 2016; Janssen et al., 2015; Schmid & Petko, 2019; Tomlinson, 2014). This study has looked at the effects of differentiated instruction on learners' success in mathematics to close the learning gap, particularly with their performance and confidence. While there have been some studies on differentiated instruction in mathematics, more research is needed to explore the strategies and approaches used in differentiated instruction that are most effective for improving mathematical achievement specific to the locale of the study.

3. Methodology

3.1. Research Design

This research employed a quantitative research design, particularly the quasi-experimental design. This allowed the researchers to use a non-random selection of the participants from the total population and did not require random assignment of individual cases for the comparison of the outcomes of the pre-and posttest for the participants exposed to differentiated instruction and those not exposed to differentiated instruction (Mbugua & Muthomi, 2014).

3.2. Participants and Sampling Techniques

The study employed a purposive non-random sampling method to select 30 Grade 10 students from Tabon National High School based on their low academic performance in mathematics from the previous grading periods, specifically in the class of two teachers. Then, participants were divided into two groups: the experimental group (15 students) who received differentiated instruction and the control group (15 students) who did not receive differentiated instruction.

The participants were chosen based on specific criteria, which in this case was their low academic performance in mathematics. The purposive non-random sampling method allowed the intentional selection of participants who met the study's requirements, ensuring that the results accurately reflected the effects of the intervention on the targeted group. Additionally, the study divided participants into experimental and control groups to compare

the effectiveness of differentiated instruction to traditional instruction, allowing for a precise evaluation of the intervention's impact.

3.3. Data Gathering Procedures

The researchers sent and secured an approval request letter and consent from the public school district supervisor, school heads, parents, and teachers concerned, as well as the participants' participation and cooperation. To maintain anonymity, the names of the participants were kept unknown throughout the study. In addition, all participants were made aware of the study's objectives. Data was collected in eight weeks, from November 4, 2022, to December 9, 2022.

Following Cabigao (2021), the researchers identified learning gaps in the participants' pretest scores during the first week of the studies. From the date the data was acquired, the researchers conceptualized and crafted materials for the intervention during the second week. The intervention was implemented using differentiated instruction such as:

Math hunting - a powerful way to facilitate independent and small-group learning. It aims to let the students use the mini-library to find essential mathematical words and examples related to their topic based on their prior knowledge.

Peer learning - the practice of students learning from and with one another. Activities for teaching and learning like student-led workshops, study groups, peer-to-peer learning partnerships, and group work are typically used to facilitate them.

Small group discussion - a student-centered methodology that enables students to actively participate and be partners in the teaching and learning process Students discuss and exchange ideas while interacting with professors and their peers. They can foster collective consensus, as well as play specific games.

Board work - Teachers can quickly assist students in learning by maintaining appropriate study habits. Making a clear record of the topic and the language learned on the board during the class will assist them in studying and recalling the lesson's language.

Bingo card games - allow students to choose different types of problems they prefer to have answered. Students in this strategy receive an extra point for each correct answer, giving them an additional opportunity to gain points if incorrect, helping to motivate learners, improve their strategic and problem-solving abilities, or increase their computational fluency.

The third through sixth weeks of the study and the seventh and eighth weeks are the most important.

Culmination - students get to integrate the knowledge and experience they have acquired during their master's program of study during the culminating activity. Students will demonstrate their knowledge's depth and breadth in their primary emphasis area of study.

The results were compared between the participants' performance levels before and after the intervention's implementation phase to determine the improvement level they gained.

3.4. Research Instrument

The researchers used an adapted pretest and posttest from the published article by Foster (2016) to categorize the personal information and school details of the participants and determine their scores in the pretest and posttest through quizzes, with a Likert rating scale to determine the level of confidence of the participants, ranging from 0 to 5, to indicate how sure the participants were of their answer. On the scale, 0 is "completely unsure", and 5 is "completely certain." The test question consists of ten items requiring the use of directed numbers to calculate (positive and negative numbers, as well as zero). Since led numbers are covered in competency for students of various grade levels, it was thought that a helpful connection could be formed between mathematics and the student's responses. The researcher altered the test question from ten to twenty items to be more relevant to the participant's level of needs and difficulty. It sought to comprehend and identify how participants responded to each item to determine the most appropriate differentiated instruction.

3.5. Data Analysis

The collected data were screened and tabulated using M.S. Excel to ensure validity. Preliminary checks such as normality (using Shapiro-Wilk) and homogeneity (using Levene's) were also conducted to ensure no assumption violations. The data is normally distributed ($p > .05$), and the variances are equal ($p > .05$). Arithmetic mean, and standard deviation was employed for the participants' pretest and posttest performance and confidence in mathematics. Independent samples t-tests were computed to determine significant

mathematical performance and confidence differences between the differentiated and control groups. On the other hand, dependent samples t-tests were calculated to determine significant differences between the participants' pretest and posttest performance and confidence. The test of difference was conducted at a .05 level of significance. All descriptive and inferential statistics were calculated using jamovi software.

3.6. Research Ethics

The study followed ethical protocol by requesting consent from the school administration and the parents of the students since the study involved minors. A consent form was also provided to the students, which outlined the study's details and allowed them to participate. By doing this, the study ensured informed consent from all parties involved. The study also ensured the confidentiality and anonymity of the participants by not disclosing their personal information and school details to any third party. This is an essential ethical consideration in research studies as it protects the privacy and confidentiality of the participants.

Lastly, the study used purposive criterion sampling, a non-random sampling technique that involves selecting participants based on specific criteria. This type of sampling allows selection of participants most likely to provide relevant information for the study. Using this sampling technique, the study could make solid statistical inferences about the entire group since selected participants met specific criteria. However, it is essential to note that the study's results may not be generalizable to the entire population, as purposive criterion sampling does not involve random selection.

4. Findings and Discussion

4.1. Pretest Performance of the Control and Differentiated Group

Table 1

Pretest Performance of the Control Group and Differentiated Group

Pretest Performance	Mean	SD	t-value	p-value	Interpretation
Control Group	6.47	2.17	-1.18	.250	No Significant Difference
Differentiated Group	7.93	4.32			

No statistical differences were found in the pretest performance of the two groups (Table 1). The result shows that the control (6.47∓2.17) and differentiated (7.93∓4.32) groups statistically had the same mathematics performance (t_{28} = -1.18, p > .05). These two groups qualified to participate in the quasi-experimental study. As expected, these students have low mathematics performance with the learning gaps brought about by the COVID-19 pandemic. This confirms Mahdy (2020) that the COVID-19 pandemic affected students' academic performance, yet it is opposite to Spitzer et al. (2021), where students increased their mathematics performance during the pandemic. The result also revealed that students have difficulty answering fundamental mathematics problems, manifesting a need for an intervention to address their learning gaps and increase their academic performance and confidence. Consistent with Pentang et al. (2020), an intervention must be done to address these gaps in mathematics emerging among students.

4.2. Posttest Performance of the Control and Differentiated Group

Table 2

Posttest Performance of the Control and Differentiated group

Posttest Performance	Mean	SD	t-value	p-value	Interpretation
Control Group	7.33	2.69	-8.87	.001	Significant Difference Exist
Differentiated Group	17.00	2.78			

The posttest performance between the control and differentiated groups showed a statistical difference (Table 2). The findings reveal a highly significant difference between the control (7.33∓2.69) and differentiated (17.00∓2.78) groups (t_{28} = -8.87, p < .01). The differentiated instruction dramatically impacts students' performances, where the students who received the intervention performed better in mathematics. The intervention program improved the mathematics performance of the differentiated group in a relatively short period. This means that the length of an intervention program does not necessarily entail one's improved performance. This is consistent with Azucena et al. (2022), where instructional intervention can effectively address students' mathematics performance. In a recent study by Valiandes (2015), compared to children in classes where differentiated instruction methods were used, it was discovered that students made higher progress in classrooms where differentiated instruction methods were used consistently.

4.3. Pre-and Posttest Performance of the Control Group

Table 3

Pre-and Posttest Performance of the Control Group

Control group	Mean	SD	t-value	p-value	Interpretation
Pretest	6.47	2.17	-2.23	.043	Significant Difference Exist
Posttest	7.33	2.69			

The data revealed that the pretest (6.47∓2.17) and posttest (7.33∓2.69) performance of the control group have a significant difference, $t_{14} = -2.23$, $p < .05$ (Table 3). The data shows that even without the intervention, students can perform well in answering mathematics problems, which supports the findings of Azucena et al. (2022) and Udofia and Uko (2018). The performance gap is not as large as in the other group that received differentiated instruction. However, it is still significantly lower than the performance of the differentiated group. The students may have employed other approaches independently despite not being exposed to an intervention. As Pentang et al. (2020) averred, any method can aid students in learning mathematics.

4.4. Pre-and Posttest Performance of the Differentiated Group

Table 4

Pre-and Posttest Performance of the Differentiated Group

Differentiated Group	**Mean**	**SD**	**t-value**	**p-value**	**Interpretation**
Pretest	7.93	4.32	-10.7	.001	Significant Difference Exist
Posttest	16.20	2.78			

Table 4 displays that the pretest (7.93∓4.32) and posttest (16.20∓2.78) scores of the differentiated group were statistically different ($t_{14} = -10.7$, $p < .01$). The result indicates that the intervention program significantly improved the learner's mathematics achievement, consistent to Azizah et al. (2021), Azucena et al. (2022), and Pentang (2021). The intervention through differentiated instruction was an effective measure to help students develop and improve their mathematical performance, which the school can retain. Still, further innovation can be made to reach excellent math qualities that are deemed among the students. The teachers concerned must understand the other factors that contributed to the student's improved performance must be conducted.

4.5. Confidence of the Differentiated Group

Table 5

Pre-and Posttest Confidence of the Differentiated Group

Differentiated Group	Mean	SD	t-value	p-value	Interpretation
Pretest	1.51	.40	-9.43	.001	Significant Difference Exist
Posttest	3.27	.75			

Differentiated instruction has a significant impact on students' academic performance. It also boosts the students' confidence in mathematics. As reflected in Table 5, the mathematics confidence of the students before ($1.51 \mp .40$) and after ($3.27 \mp .75$) is statistically different ($t_{14} = -9.43$, $p < .01$). The findings show that students become more confident after attending differentiated instruction, coinciding with Azucena et al. (2022), Cabigao (2020), Foster (2016), and Torres (2021). Addressing students' learning gaps was successfully achieved using differentiated instruction, even in a short period. It also increased the students' confidence in answering mathematics problems. Still, further research must be conducted to verify these results.

5. Conclusion

Based on the study's findings, differentiated instruction effectively closes students' mathematical learning gaps, particularly when tackling integer-related issues. This teaching approach allows educators to tailor their instruction to meet the individual needs of each student, taking into account their unique learning styles and abilities. Through the implementation of differentiated instruction, students in the intervention group were found to outperform the control group regarding math proficiency and self-assurance. This is likely since students in the differentiated group were able to receive instruction that was specifically targeted to their learning needs and styles, allowing them to engage more fully with the material and develop a deeper understanding of the concepts being taught.

In addition to improving math proficiency, differentiated instruction also increased student confidence when it came to solving integer mathematics problems. Students who had previously struggled with these problems were now more willing to participate in class and take on challenging math tasks, thanks to the additional confidence they had gained through the differentiated instruction approach. From a teacher's perspective, differentiated

instruction can be a powerful tool for achieving goals and objectives in the classroom. By tailoring instruction to meet each student's unique needs, educators can better engage their students and promote a deeper understanding of the material.

Finally, it is essential to note that student confidence is a critical predictor of mathematics achievement. Research has shown that students who feel confident in their mathematical abilities are likelier to succeed in math courses, while those who lack confidence may struggle to keep up. As such, differentiated instruction can play an essential role in helping to close the achievement gap in mathematics by providing targeted support to those students who may be struggling and boosting their confidence in the learning process.

6. Recommendation

The school has the opportunity to enhance the teaching and learning process by providing professional development training, seminars, and workshops for teachers in differentiated instruction. It is crucial to encourage and support teachers to implement differentiated instruction frequently to improve higher-order thinking skills in students, which can be achieved by exposing them to more complex problems. Teachers must focus on strategies that promote knowledge acquisition and content mastery to facilitate effective teaching and learning. It is recommended to design activities that cover various levels of Bloom's Taxonomy, a system of thinking skills that range from lower-order to higher-order thinking. Teachers can help students effectively understand the lesson's content by utilizing this framework. Both physical and psychological factors must be considered to create optimal learning conditions. A versatile classroom layout with different seating arrangements should be incorporated to support individual and group work. Teachers must also use effective classroom discipline techniques that promote a positive and safe learning environment from a psychological standpoint. Future researchers can benefit from this study's research findings and results, but they must consider the study's limitations and allocate sufficient time for their research to obtain more comprehensive results. The action plan below is recommended to facilitate the teachers in implementing a sustainable differentiated instruction program for students who struggle with mathematics.

6.1. Activities

Addressing students learning gaps in mathematics through sustainable differentiated instruction.

6.2. Objectives

1. To address students' learning gaps in mathematics using varied teaching and learning strategies to address students' learning gaps in mathematics using differentiated instruction.
2. To improve students' academic performance and boost their mathematical confidence.
3. To aid and comprehend the program's effectiveness in the teaching and learning process in implementing the "Adopt a School Program".
4. To improve the school's performance on a school-mean achievement test and school average in math

6.3. Date of Implementation

Differentiated instruction will be implemented during mathematics class sessions, every new topic or lesson, and when necessary.

6.4. Persons Involve

Subject teachers, students, school heads, stakeholders (internal and external), and resource persons will work together to attain the aims of the intervention.

6.5. Budget Allocation

Funds needed for the program must be covered from the government-allocated fund for public elementary and secondary schools or any outsourcing fund, as well as donations from parents and stakeholders to provide the materials needed for the session.

6.6. Expected Output

1. Students have improved their performance in mathematics, evident through their class academic standing.
2. The students have shown confidence in dealing with their math subjects and are ready for STEM-related activities.

6.7. Future Directions

1. Continuous monitoring and evaluation of the intervention program will be conducted quarterly. Pre- and posttest will be utilized with focus-grouped discussion with the learners regarding their experience.

2. Impact assessments will be conducted yearly. Longitudinal studies will be proposed to capture the program's short- and long-term impact.

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Affective Filters' Extent of Influence on Oral Communication: L2 Learners' Perceptions

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Abstract

Second language (L2) learners are taught to speak English to be able to communicate effectively like when debating a topic and conversing about everyday topics. However, studies suggest that L2 students feel unmotivated, unconfident, and anxious speaking English in and out of classroom environments, which then creates an impact on the development of their language proficiency and efficiency. This paper primarily aimed to determine the affective filter's extent of influence on oral communication based on the perception of senior high school ESL students in a southern Philippine private school. Using the descriptive-quantitative design, data were gathered via a survey questionnaire from a total of 258 senior high school students. Results reveal that students' affective filters generally influence their oral communication to a moderate extent. Among Krashen's identified affective filters (self-motivation, self-confidence, and anxiety), three indicators of self-motivation garnered the highest mean ratings and standard deviation scores. The results show that students' oral communication is most influenced by their motivation to learn the target language, which in turn makes the learning process fun and gives them real-world opportunities to use the language. The study's pedagogical implications for the future of language education include a call for teachers to maintain high levels of student motivation, assist their students in building self-confidence, and devise strategies to boost their students' linguistic competence in the classroom. In order to strengthen students' capacity for effective oral communication, it is imperative that school officials give more weight to students' affective development.

Keywords: *Affective filters, L2 learners, oral communication, language education, Philippines*

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1. Introduction

In today's globalized world, students benefit greatly from learning English because of the language's status as the global lingua franca which is utilized in materializing and expanding job opportunities in the global economy. Moreover, English provides access to new forms of media, which in turn stimulates more robust dialogues or exchanges on pressing issues. Due to this, English has emerged as the undisputed international language of choice (Crystal, 2007). Therefore, in order to compete in the global economy, today's students need to succeed in multinational corporations, international trade, diplomacy, and the scientific and technological fields. Yet, in order to achieve these goals, students need to be communicative in English, i.e., students should at least be able to speak the language effectively and purposefully while studying, e.g., in in-depth discussions and even in casual conversations in preparation for their future careers (Lemana, 2022).

Nonetheless, in academic discussions, ESL students in Asia are frequently portrayed as introverted and uninvolved participants (Nadesan & Shah, 2020; Takahashi, 2019; Wan, 2021). They are deemed to be attentive and note-taking students but are otherwise reticent to actively engage in class. Such a concern that Asian learners are unresponsive, question-averse, passive, and overly reliant on their teachers has been highlighted in other research as well (see Kim, 2006; Takahashi, 2019). For instance, Wu's (2019) study at a Chinese university surveyed 144 students to learn what they thought was causing their hesitation. According to the results, students' reticence is linked to factors including limited language competency, fear of speaking a foreign language, introversion, and teacher influence. The study implies that students try to increase their oral English production by motivating themselves, getting ready in advance, and engaging in regular practice and that teachers will facilitate more speaking activities, provide direction, and be friendly to boost student participation.

Meanwhile, Filipinos show a higher degree of emotional disturbances when speaking English for oral communication in academic settings than in casual circumstances (Chureson, 2012). Hamouda (2013) says that these affective factors—fear of public speaking, fear of being judged negatively, shyness, lack of confidence, lack of preparation and fear of making mistakes, reluctance to criticize peers' opinions, fear of lecturers, and the possibility of asking for more information—make it hard for students to speak up in class. According to Krashen (1986), when these factors are present, it becomes more challenging for one to learn a target

language, e.g., English. Krashen's affective filter hypothesis purports that as a mental barrier, a negative affective filter rises to prevent information from entering and thereby blocks thinking. In contrast, when the affective filter is weakened, a sense of security is enhanced, and linguistic development takes place. Thus, studies (see Chureson, 2012; Hamouda, 2013; Takahashi, 2019; Wan, 2021; Wu, 2019) on how to combat these filters to strengthen the second language learning environment for students have called the attention of language researchers since then till now.

Language teachers, linguists, and scholars have debated and researched affective concerns in recent years, and variables were discovered to have a substantial impact on oral communication success. In fact, previous related studies (see Chureson, 2012; Hamouda, 2013; Takahashi, 2019; Wan, 2021; Wu, 2019) dwelt on a particular affective filer or an emotive aspect of students' communication while learning English as a foreign or second language, but the present researchers have not stumbled upon a study considering all three affective filters that apparently take part in students' oral communication, more so a study in the locale of this study with the chosen respondents; hence, this study was pursued.

Using Krashen's (1986) affective filter hypothesis, this study determines the extent of influence of the affective factors on oral communication based on the perception of senior high school students in a southern Philippine private school. This study argues that English teachers must be propelled to boost the confidence of their passive students so that they can participate actively in speaking classroom activities. From the findings, this study is expected to benefit school administrators by providing a baseline for planning, monitoring, and evaluating intervention programs in addressing affective filters towards improving students' oral communication skills. This study also hopes to spark greater research on affective filters' functions in strengthening students' writing, reading, and listening skills, which have pedagogical implications for language teaching and learning.

2. Literature review

2.1. Krashen's Affective Filter Hypothesis

The affective filter hypothesis proposed by Krashen in 1985 suggests that learners of a language may be distracted by emotional factors while they are engaged in the process of language acquisition. For instance, it is possible that students will not be able to comprehend what they are meant to learn at school as a result of the unfriendly temperament of their teacher or the antagonistic and competitive attitudes of their fellow students. Krashen

contends, in the affective filter theory he developed, that in the field of second language acquisition (SLA), a number of significant factors that influence the success of language learners should be tied to the learners' emotional state. The degree to which a student is motivated to participate in class and the degree to which their instructors encourage them to believe in themselves are two factors that can influence the effectiveness of the student's second-language acquisition.

The fundamental tenet of the affective filter theory is that students of second languages who possess high levels of motivation, high levels of self-confidence, and low levels of anxiety are better equipped for success. Conversely, a lack of motivation, poor levels of self-confidence, and chronic anxiety can "increase" the affective filter and create a "mental block" that restricts the utilization of understandable input for the purpose of acquisition.

2.2. Self-motivation

In the context of ESL teaching and learning, students' communication readiness is affected by motivation. He (2016) states that motivation is an inner power that allows learners to love speaking English, and regardless of motivation, a strong desire to succeed and excel in oral communication will increase study interest. Studies (see Cho & Heron, 2015; Cho & Shen, 2013; Stark, 2019) have shown that students with a strong desire to succeed are more likely to keep learning and get better grades than those with a weaker desire. This shows that building motivation to learn is important for every teacher to help them improve students’ oral English proficiency, which affects their academic performance. On the other hand, Juhana (2012) opines that arguably the failure of teachers to urge learners to use English in class is the primary cause of the learners' unwillingness to speak the language themselves.

In a study by Amoah and Yeboah (2021), non-English majors at a Chinese university were observed to find out what factors affect their speaking skills, how motivated they were, and how they could improve their English as a foreign language (EFL) skills. Seventy-five respondents filled out two surveys and participated in one interview question for the study. Findings show that the factors that hold respondents back from speaking well are either linguistic or psychological. It was also found that Chinese EFL learners have more trouble speaking because of psychological issues like anxiety, fear of making mistakes, unwillingness, and fear of getting a bad grade than because of linguistic issues like a lack of

vocabulary, pronunciation, grammar rules, reading, and oral presentation. The study came to the conclusion that motivation is one of the most important parts of getting good at speaking. It suggested that teachers create an environment that will help students feel less anxious or shy and find ways to boost their speaking confidence.

2.3. Self-confidence

Confidence, a key emotional element, is thought to play a big influence on learning, according to Krashen (1985). Self-confidence, sometimes referred to as self-esteem, is that crucial feeling one can achieve what he has set for himself, such as winning the next point or making a selection. In communication, this is manifested through speaking with confidence, avoiding distractions, and expressing thoughts. Accordingly, self-confidence inspires positive learning and thus motivates students to learn the target language, enjoy the process, experience actual dialogue, speak whole phrases, and speak through attempting.

In addition, according to the reasoning behind Krashen's beliefs, learners' lack of English competence can be another factor contributing to their lack of self-confidence. According to Banjong (2015), a lack of fluency in spoken English has a negative impact on students' self-esteem. This is due to the fact that many students struggle to deal with the peculiarities of the target language that they are learning. Low self-esteem has repercussions not only in the daily life of the learners but also, potentially, in their academic accomplishments. This goes to show that students who struggle with their confidence tend to be reserved, unwilling to speak out in class, and unable to formulate logical statements while they are there. Furthermore, according to Juhana (2012), some of the factors that contribute to a lack of self-confidence are the fear of making errors, the fear of being laughed at, and the fear of receiving poor marks. Learners who struggle with low levels of self-confidence in the speaking classroom will consequently have less opportunity to practice, resulting in difficulty expressing themselves in English (Gabejan, 2021).

2.4. Anxiety

Anxiety, or language anxiety, has been deemed a significant obstacle for language learners, which is not surprising given the enormous attention that is being paid to the acquisition of foreign languages. Horwitz et al. (1986) state that language anxiety is "a distinct complex of self-perceptions, beliefs, feelings, and behaviors related to classroom language learning that arises from the singularity of the language learning process." In a similar vein, another prominent definition was produced by Maclntyre (1999) who defined

language anxiety as a sensation of stress, nervousness, emotional reactivity, and worry that is linked to the process of learning a second or foreign language.

Even from a modern point of view, Oteir and Al-Otaibi (2019) maintain that anxiety can make it demanding for someone to learn a new language. Researchers in the field of language learning, such as Alrabai (2014) and Wu (2010), found that anxiety is one of the biggest problems that EFL learners face when trying to learn a language. This denotes that language anxiety is a sort of situational anxiety that stems from the novel circumstances of formal language study, and more specifically from a person's negative perception of their own communicative ability in the target language (Djafri & Wimbarti, 2018; Rodriguez & Abreu, 2003). Thus, anxiety stands out among other affective variables as one of the most significant obstacles to effective language acquisition. As a result, teachers of foreign languages frequently stress the importance of helping their students understand that fear can have a detrimental effect on their progress in the subject. In their study, Tsiplakides and Keramida (2009) elaborate on this idea by showing that anxious students are less likely to take part in speaking activities because they believe they are not good at speaking and fear that their classmates will evaluate them adversely if they do.

3. Methodology

Using a descriptive-quantitative design, this study was conducted to determine affective filters' extent of influence on oral communication based on the perceptions of senior high school ESL students in a private Catholic school in the southern part of the Philippines. This school was purposively chosen for the study by virtue of convenience and direct usability of research findings, as this was where the main author worked as an English teacher. By using Slovin's formula, the study figured out how many samples were needed (N=848; n=258). Through a stratified sampling technique, the study considered 149 Grade 11 (55.60%) and 119 Grade 12 (44.40%) respondents. Meanwhile, senior high school students in the school were chosen as respondents as it was convenient for the researchers to request to participate. Nonetheless, it was clarified to them that their (non)participation in the study would not impact in any way their marks in English or in any other subjects. Their profile indicates that their age ranged from 16 to 21 years old, 126 of them were males and 142 others were females, and they were from diverse linguistic and cultural backgrounds (Ilonggo, Ilocano, Cebuano, Maguindanaon, Maranao, others). As to their strands, 110 pursued Humanities and Social Sciences; 15 were under the General Academic Strand, while

under the Science, Technology, Engineering, and Mathematics (STEM), there were 97 of them; lastly, 46 took the Accountancy, Business, and Management (ABM) strand.

To collect the needed data, the study used a researcher-made survey questionnaire validated by three language research experts. Written in English, the one-part questionnaire consisted of 30 items, with 10 items for each of Krashen's (1985) affective filters, i.e., self-motivation, self-confidence, and anxiety. The instrument made use of an adopted 4-point Likert scale (McLeod, 2019) where 4 = strongly agree, 3 = agree, 2 = disagree, and 1 = strongly disagree. In terms of data gathering procedure and data analysis, the researchers addressed a letter to the president of the school and the principal of the senior high school department to perform the study with a systematic execution. After receiving clearance from the president and the principal, the researchers disseminated survey questionnaires to respondents through Google form on a certain date and time and ensured their retrieval one week later. The data were tabulated and processed to provide the relevant figures for analysis. Moreover, the analysis of the data was done using the IBM SPSS Statistics 28.0.1.1 application. Utilizing particular statistical tools like frequency, percentage distribution, mean, and standard deviation, the results were interpreted and discussed accordingly. Specifically, in the discussion of the results, the three highest and the three lowest mean ratings with their standard deviations (SDs) were highlighted.

This study also assured that ethical protocols were adhered to strictly. Prior to data collection, necessary clearances from school authorities were obtained. The comments and suggestions of the school research panel of four specialists were taken into account and incorporated into the manuscript. All respondents were also able to express their voluntary participation by signing the consent form, which explained the objective and nature of the research. These respondents were not coerced into disclosing any information. Writing their names on the form may or may not appear in the survey, and their replies were treated confidentially. Similarly, their safety was addressed, as no rigorous physical work that could impair their overall health was performed.

4. Findings and Discussion

Based on Table 1 on the proceeding page, generally, it can be noted that affective filters have a moderate extent of influence on the oral communication of ESL senior high school students in a southern Philippine tertiary institution. Furthermore, among the indicators of these filters, the top three are: *I will keep improving my oral English from now*

on if my oral English proficiency affects my academic performance (M= 3.35, SD= 0.72); *I want to learn to speak in English well for it will be helpful for my future job* (M= 3.28, SD= 0.91); and *I want to learn oral English well so I can go abroad in the future* (M= 3.26, SD= 0.73). The findings show that all the above-mentioned indicators fall under one affective filter, i.e., *self-motivation*. This suggests that the respondents are motivated to communicate orally in English; hence, they find themselves positively driven to speak or utilize the target language in general. These senior high school students, who belong to Generation Z or the post-millennial generation, i.e., people whose *identity is deeply intertwined with the digital world*, appear to embrace and practice the essence of oral communication within their circles. This could be because of the fact that for this group of individuals, communication processing, whether physically or virtually, must be always continuous and growing. According to Csobanka (2016), learners of today are eager to employ in conversations the target language so they can be more competitive, conversational, and on par with others in social networks and digital platforms.

Table 1

Affective Filters in Oral Communication of Senior High School Students

Affective Filters	Mean	SD	Interpretation
Self-Motivation			
1. I really enjoy speaking English.	2.84	0.93	Moderate Extent
2. I have a strong desire to achieve and excel in Oral Communication.	3.13	0.72	Moderate Extent
3. I think speaking English well enables me to participate in the activities of other cultures more freely.	3.17	0.72	Moderate Extent
4. I like dealing with people who speak English.	2.88	0.84	Moderate Extent
5. I want to learn to speak in English well, for it will be helpful for my future job.	3.28	0.91	Moderate Extent
6. I will keep improving my oral English from now on if my oral English proficiency affects my academic performance.	3.35	0.72	Moderate Extent
7. I take great interest in participating in the activities about language.	3.11	0.71	Moderate Extent
8. I learn spoken English in order for me to communicate with foreigners more effectively.	3.16	0.79	Moderate Extent
9. I want to learn oral English well so I can go abroad in the future.	3.26	0.73	Moderate Extent
10. If I have an opportunity of being taught by a foreign teacher, I will talk with him in English as possible as I can.	3.16	0.84	Moderate Extent
Sub-total	***3.13***	***0.79***	***Moderate Extent***
Self-Confidence			
1. I feel confident about speaking English in class.	2.84	0.70	Moderate Extent
2. I think my spoken English is good.	2.84	0.75	Moderate Extent
3. I have confidence in my language talent.	2.85	0.72	Moderate Extent
4. The remarks from teachers or other students will have influence on my confidence in oral English proficiency.	2.95	0.70	Moderate Extent

Affective Filters	Mean	SD	Interpretation
5. I can avoid distractions while I speak.	2.56	0.86	Moderate Extent
6. I believe I can speak well as long as I try.	3.12	0.81	Moderate Extent
7. I always feel comfortable and delightful before English class gets started.	2.94	0.79	Moderate Extent
8. I don't feel nervous when speaking English in class.	2.69	0.89	Moderate Extent
9. I can speak complete sentences.	2.76	0.82	Moderate Extent
10. I can put my ideas into speaking.	2.97	0.76	Moderate Extent
Sub-total	***2.85***	***0.78***	***Moderate Extent***
Anxiety			
1. I always sit at the back or avoid eye contact with the teacher for fear of being asked to answer questions	2.84	0.70	Moderate Extent
2. I always care about other persons' opinions about me.	2.84	0.75	Moderate Extent
3. When communicating in English, the other party's facial expressions or body reactions will have great influence on me.	2.84	0.72	Moderate Extent
4. I am always afraid of making mistakes when speaking English in class	2.95	0.70	Moderate Extent
5. I always think that other students speak English better than I do.	2.56	0.86	Moderate Extent
6. I am afraid of being looked down upon when I find other students can speak English better than I do.	3.12	0.81	Moderate Extent
7. When I realize I have made a mistake, I will become more nervous.	2.94	0.79	Moderate Extent
8. I am afraid of being tested or assessed by my teacher through formal or informal methods.	2.69	0.89	Moderate Extent
9. I am always nervous when my English teacher asks me to answer questions in front of the whole class.	2.76	0.82	Moderate Extent
10. I want to speak English, but I am afraid that other students will laugh at me, so I just passively wait for being asked to answer questions	2.97	0.76	Moderate Extent
Sub-total	***2.85***	***0.78***	***Moderate Extent***
Overall Total	***2.95***	***0.78***	***Moderate Extent***

Legend: 3.50 – 4.00 To a Great Extent; 2.50 – 3.59 To a Moderate Extent; 1:50 – 2.49 To a Limited Extent; 1.00 – 1.49 Not at All

Breaking down the results, *Self-motivation #6—I will keep improving my oral English from now on if my oral English proficiency affects my academic performance* (M= 3.35, SD= 0.72) is the first in the list of affective factors affecting respondents' oral communication. Senior high school students may have realized that, as learners of the second language, they have the inner desire to develop themselves in terms of their competence in the field of English when it has something to do with their grades in English. This result is in line with what Richards (2008) said, which is that most people who learn a foreign language are most interested in speaking and want to improve their speaking skills more than other skills. This is because success in learning English is often linked to speaking skills that affect academic performance, while mastery of a language is often the same as speaking it well.

Self-motivation #5—I want to learn to speak English well for it will be helpful for my future job (M= 3.28, SD= 0.91) ranks second. The respondents could have believed that

having a strong command of the English language would result in higher-paying occupations, more opportunities to rise in one's social standing and greater social achievements. They may have also thought that knowing English can boost their chance of obtaining a decent career with a multinational organization in their native country or finding employment overseas. This finding corroborates the claim from the study of Khan and Takkac (2021), which states that one of the reasons why one has to learn English as the international lingua franca is a desire for career and socioeconomic enhancement. According to Chung (2013), students of today are under the impression that acquiring English language skills is necessary for them to acquire a respectable career in the future and that acquiring English language skills may increase their chances of obtaining employment. This kind of instrumental motivation, in their view, plays an important part in the learners' contemporary learning environment.

Self-motivation #9—*I want to learn oral English well so I can go abroad in the future* (M= 3.26, SD= 0.73) falls third in rank. Respondents may have been motivated by the fact that in order to work abroad, where the salary is drastically higher than that in the Philippines, they need to learn English first and employ it very competently in school. Hamouda (2013) emphasizes that in international companies, English is the most likely language to be encountered, as it is the most widely used business language in the world. Therefore, applicants are frequently required to speak this language, and their salary grade may depend on their language proficiency. In a similar vein, Tran (2013) adds that English is essential for present students since it will assist them in their academics and, more importantly, their future careers and lives. To them, English is seen as the key to getting them into the kind of jobs they wanted in the fast-growing foreign investment sector, which offers better jobs and higher pay. He continues that those people who speak English well also have an advantage in other parts of the economy. So, Juhanna (2012) emphasizes that the motivation of one person to learn and apply the language, like in speaking, must be enhanced more, so the motivation to succeed in the academe and the work field will follow.

Conversely, the indicators of the affective factors that got the three lowest mean ratings are the following: Self-confidence #5— *I can avoid distractions while I speak* and Anxiety #5—*I always think that other students speak English better than I do* which both landed on the first rank having the same mean rating and SD (M= 2.56, SD= 0.86); Self-confidence # 8—*I don't feel nervous when speaking English in class* and Anxiety # 8—*I am afraid of being looked down upon…* which both landed on the second rank having the same

mean rating and SD *(M= 2.69, SD= 0.89);* and Self-confidence # 9—*I can speak complete sentences* and Anxiety #9—*I am always nervous when my English teacher asks me to answer questions in front of the whole class* which both landed on the third rank having the same mean rating and SD (M= 2.76, SD= 0.52). While these indicators got the lowest mean ratings, these indicators are still interpreted to influence students' oral communication *to a moderate extent.* The finding shows that there are two affective factors that achieved the same rank in each of the lowest three mean ratings. To explicate, indicators under *self-confidence* and *anxiety* are the lowest, second lowest, and third lowest mean rating earners. This finding implies that some senior high school students may have been experiencing moderate self-confidence while others encounter moderate anxiety when it comes to their demonstration of oral communication skills. This could have resulted from the various practices of language learning in their previous and current schools. Consequently, this implies that there be a creation of a school climate that is suitable for English language acquisition, as environmental elements at school are as significant as ESL teachers' pedagogical interventions to address low confidence among students in the use of the target language (Fatmawati et al., 2020; Lodhi et al., 2019; Adeyemo, 2012). Manalastas and Batang (2018) expound that using English as the main language of instruction in Philippine classrooms could help students learn English better and make them more aware of the role and benefits of English as a language of globalization. In their study, it has been found that making English the main language of instruction has a big impact on how comfortable students feel using the language in and out of the classroom.

Particularizing the results, Self-confidence #5— *I can avoid distractions while I speak* (M= 2.56, SD= 0.86), and Anxiety #5—*I always think that other students speak English better than I do* (M= 2.56, SD= 0.86) project to be the lowest mean rating earners. This finding suggests that respondents' acknowledgment of the fact that avoiding distractions while they orally communicate is a concern. The result would show that internal and external distractions, which affect the success of the communication process, need to be addressed. Therefore, according to Kubo (2009), in order for students to have the confidence to speak English while avoiding distractions, teachers must provide many opportunities for students to practice correct pronunciation and intonation and freely talk. On the other hand, students in their senior high school year are moderately convinced that their peers speak English better than they do. It is a sign that their level of anxiety in regard to utilizing the language requires

attention and intervention. According to Yan and Horwitz (2008), many people aspire to speak the language but are hesitant because they perceive others to be more proficient. As second language anxiety has a detrimental effect on the oral performance of speakers of English as a second language, it is vital to investigate this topic in order to find students' anxiety issues in language learning and application, such as in speaking (Horwitz, 2001; Oteir & Al-Otaibi, 2019; Woodrow, 2016).

Furthermore, the result shows that Self-confidence # 8—*I don't feel nervous when speaking English in class (M= 2.69, SD= 0.89),* and Anxiety # 8—*I am afraid of being looked down upon (M= 2.69, SD= 0.89)* are even in the second rank from the bottom. Students appear to be moderately troubled when given the task or chance to speak before a crowd in class because they must have been reluctant as language users. Tridinanti (2018) purported a student's reluctance to communicate in English could be correlated with his language anxiety and self-confidence. Accordingly, students who enter language classes with a high level of anxiety, concern, or dread and a low level of self-confidence may find it challenging to enhance their ability to speak the target language fluently and effectively. It goes to deliver that self-confidence influences the learner's language performance. Put differently, students who lack confidence are usually found to be extremely fearful, timid, and feel nervous when speaking English in class, reluctant to express their opinions, etc. Whereas, some feel moderate anxiety because they feel afraid of being looked down upon. They must have felt that every time they cannot provide their teacher with an answer, their classmates might laugh at them, or worse humiliate them (Cooper et al., 2018; Russel & Topham, 2012).

Lastly, Self-confidence # 9—*I can speak complete sentences* (M= 2.76, SD= 0.52), and anxiety #9—*I am always nervous when my English teacher asks me to answer questions in front of the whole class* (M= 2.76, SD= 0.52) are tie being the third in rank from the bottom. Speaking and writing in entire sentences is of utmost significance, particularly in more official settings and contexts. Students will acquire knowledge regarding proper grammar and sentence structure if they do so. However, the finding implies that senior high school students seem to be having concerns regarding their skills in composing sentences orally. This implies that there is a significant problem caused by the fact that many students have difficulty speaking in complete sentences, and this is deemed to be a problem since the significance of a learner's ability to effectively communicate verbally cannot be understated.

This finding can be attributed to the needed reinforcement of students' communicative competence. In an attempt to define communicative competence, Kiessling and Fabry (2021) call it the ability to fulfill communicative goals in a manner that is socially suitable and described it as organized and goal-oriented, which means that it involves the capacity to choose and use abilities that are beneficial in the corresponding environment, e.g., classroom discourses. Additionally, communicative competence must basically consider the capability and confidence to speak and write complete sentences, that is why, instruction in language classes has traditionally been aimed toward developing students' organizational, pragmatic, systematic, and psychomotor skills with the ultimate goal of producing communicatively competent students (Lasala, 2014). Meanwhile, tied with *self-confidence # 9* on the third from the bottom is Anxiety #9—*I am always nervous when my English teacher asks me to answer questions in front of the whole class.* Senior high school students may have moderately felt language classroom anxiety, especially when they will be called for a recitation, or asked to demonstrate understanding of the topic. According to the survey by Juhanna (2012), second language learners are noticed to possess a silent fear of English as a subject due to English teachers asking students to answer questions in front of the whole class. Hence, for her, this manifestation of stress, and anxiety that impedes language learning and performance abilities must be given considerate and urgent attention.

In general, the result of the present study shows that the overall mean rating of 2.95 (SD= 0.78) may suggest that affective factors have a moderate extent of influence on the oral communication of senior high school based on their perceptions. By saying respondents are not totally influenced by their affective factors in oral communication, this may be probably due to the lack of knowledge on the significance of these affective factors influencing their overall understanding of how self-confidence, self-motivation, and anxiety play a vital role in their second language learning and usage. Moreover, the result may imply that students need to realize that in order to seek optimization of oral communication and second language learning in general, a low affective filter is necessary (Krashen, 1985; Krashen, 1986; Khabirova, 2022; Yaoqing, 2021). In light of this, Dong et al. (2022) suggest that teachers should significantly boost their students' motivation, significantly boost their students' high levels of self-confidence, and significantly lower their students' level of anxiety in learning the target language.

5. Conclusion

Based on the results of the study, students' affective filters influence their oral communication *to a moderate extent*. The study concludes that motivation leads as an affective factor that allows students to continuously develop their oral communication skills. The result implies that students should have to work on the development of their self-confidence and get rid of their anxiety which in numerous ways affects their oral communication skills. The study further demonstrates that students' skills in oral communication are significantly impacted by emotional elements that encompass the fundamental aspects of conduct, such as sentiments, interests, attitudes, feelings, values, and so on. Hence, this study supports the idea that the emotive side of students can influence the success or failure of language learning.

Therefore, implications on the pedagogical practice are put forward from different angles. For example, important ideas and procedures for teaching public speaking should be incorporated into teachers' formal training. Also, it is necessary for educators to have institutional and administrative support in order to be able to offer students a conducive environment in which they may learn the target language and culture using instructional strategies that are effective. Meaning, the school setting should not be the only place where one can acquire English language skills; it is of the utmost importance to encourage learners to utilize English in any and all settings available while they are in school. In the same vein, second language (L2) learners should be encouraged and guided to practice their language abilities outside of the classroom in natural contexts. Here, teachers must help students improve their spoken English by exposing them to authentic contexts in which the language is used, such as through the use of social media and the habitual viewing of English-language content like videos, podcasts, and films. Teachers should then continue to motivate students and help them to develop their self-confidence in order for them to get rid of their speaking anxiety by planning activities that will improve the students' speaking fluency and vocabulary construction; school administrators should give more emphasis and attention to the affective aspects of the students; students should work with their teachers to bring out motivated feelings and a comfortable atmosphere during classroom discourses and should take advantage of all available opportunities to practice speaking English without worrying

about being judged by their peers; lastly, an enhancement module could be formulated offering meaningful activities for the students' affective factors.

Such an enhancement program could be consisting of the following parts: rationale, vision, mission, and module lessons. Each module lesson could comprise the objectives of each of the suggested topics on affective filters, content/ discussion points of the lesson/ topic at hand and its implications on English language learning (ELL), important points to remember which are presented in different forms, research related to the topic, space for personal reflections and insights about the topic, activities (puzzles, concept maps, short quizzes, or activities for lesson application) regarding the topic presented, and references.

On motivation, a discussion on its definitions, types, effects, and influence on oral performance may be focused on. Practices on working on student motivation could be allotted more time and attention. In terms of self-confidence, the module may present how this affective filter is understood from different angles in relation to language learning, on top of delineating its types and benefits. The latest research on building self-confidence in a language classroom may be introduced. Individual, dyadic, or group simulations using the target language may engage and interest the learners toward improving their self-confidence. Lastly, with the goal to lessen, if not totally omit, students' language anxiety, further diagnoses may be conducted. Speech anxiety is attempted to be addressed here by introducing techniques in relaxation, visualization, concentration, mind-conditioning, and consistent practice and experience.

In essence, while this study brought forward significant data, this study is not without limitations. While the quantitative nature of the study yielded valuable data, the findings and analyses cannot be deemed generalizable beyond the respondents of the study. This study was concerned with determining the perceived extent of influence of affective filters on the oral communication of ESL senior high school students in a private school in the southern Philippines. A study on the correlation between such affective filters and the results of an oral communication test could offer deeper different perspectives regarding the topic. Other statistical tests like analysis of variance (ANOVA) and t-tests concerning gender, strand, and year level may also be explored. Furthermore, the current study only considered senior high students as respondents. Future research may wish to carry out a similar study with college students from various majors so remedies regarding their oral communication may be put into place in preparation for their professional careers in the future. Lastly, this study is

purely quantitative in nature. Other researchers may want to consider pushing for a qualitative study whose data can be gathered through classroom observations and interviews for a needed discourse or thematic analysis, so perceptions, (de)motivations, strategies, coping mechanisms, or practices in communication may be explored.

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Impact of Synchronous Class Attendance on the Academic Performance of Undergraduate Students

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Abstract

Due to the pandemic, open and flexible learning has become the norm for schools and universities, where students get lessons through online classes or study modules. Acknowledging the difficulties of remote learning, many institutions allowed more flexibility by providing learners with increased choice and accessibility to suit their learning conditions. One is making online class attendance less mandatory compared to the pre-pandemic when attendance was strictly implemented in most schools. To a certain extent, this allowed students to study at their own time and pace and even assume work and home responsibilities. Hence, this study aims to determine the impact of attendance on students' academic performance in online synchronous classes in one of the state universities in the Philippines. Using descriptive quantitative analysis, the 210 students' attendance in online classes were recorded, while their final grades served as an indicator of academic performance. The results showed that synchronous online attendance positively impacts students' academic performance. In general, students who regularly participate in online classes get a higher final grade. Furthermore, results showed a moderately positive relationship between these two factors using the Pearson correlation coefficient. Meanwhile, instructional support such as recorded lectures and supplementary materials prevented asynchronous students or those who could not participate in synchronous online classes from failing the course. This study recommends implementing more active learning strategies and in-class group work to avoid non-essential absenteeism and promote and encourage lecture attendance.

Keywords: *Online Learning, Synchronous Learning, Class Attendance, Academic Performance, Recorded Lectures*

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1. Introduction

The educational system took on a new dimension when the coronavirus pandemic affected the world, leading to extensive school closures. The global crisis compelled higher educational institutions to embrace distance learning. With the aid of digital technology and various e-learning platforms, this shift from in-person or face-to-face classes to online mode needs to be seamless and immediate to shun any educational disruptions. This also necessitates upgrading the digital skills of the stakeholders to deal with the emerging global trends in education (*Education & Technology*, 2021). The sudden shift posed an enormous challenge confronting educators, students, and school administrators. How the students are educated through distance learning vastly differs from how they were previously taught through traditional face-to-face learning.

Distance learning has become the standard for schools and universities, with students receiving instruction through either online classrooms or study modules (*Nikkei Asia*, 2021). As defined in Oxford Dictionary, distance learning is a way of studying that does not require students to go to a school or college, and lectures are broadcasted, or classes are held via correspondence or the internet. Instead of going to a university campus, students can study from remote locations using PCs, tablets, phones, and the internet. Other terms used in distance learning are e-learning, online and flexible learning. These are characterized by the physical separation of teachers and students and the use of various technologies to promote communication between students and teachers and between students. According to the Commission on Higher Education, "flexible learning" for higher education institutions combines digital and non-digital technology and is not always dependent on being online. With massive school closures, several institutions implemented an alternative approach by providing printed modules to digitally-challenged students. However, modular learning proved to be logistically and pedagogically challenging in many aspects (Barcenas & Bibon, 2021; Castroverde & Acala, 2021).

Allowing students to participate, interact, and attend classes synchronously can improve progress since academic achievement is linked to the number of times students engage with the online learning system (Nieuwoudt, 2020). Zhu et al. (2019) indicate that a stricter attendance policy significantly impacts student attendance, absences negatively impact course grades, and course delivery methods do not predict attendance or course grades. Similar findings were articulated by Hsu & Plunkett (2016) that attendance positively

affected student performance in numerous disciplines and suggested that educators encourage attendance as one pedagogical strategy. Several studies indicate that attending classes has a favorable and significant impact on academic achievement (Dey, 2018; Elbilgahy, 2021; Riaz et al., 2022).

With these findings, it could be inferred that while attendance during online and synchronous classes is essential, other factors significantly influence students' academic performance. Effective and inclusive instructional and academic support and student motivation also contribute to the learner's academic success (Steinmayr et al., 2019; McKenna et al., 2018; Altermatt, 2019). Teachers sometimes take significant initiatives to prevent students from falling behind and safeguard their academic experiences by providing support beyond synchronous interactions. Web-based course materials, self-paced learning modules, and recorded lectures are some of the instructional materials that supplement and revitalize live lectures.

Several studies provided different views as to the impacts of attendance in classes on students' academic performance. This study explores whether attendance in online classes helped students improve their academic performance in one state university in the Philippines. The study results will provide valuable insights for teachers and educational institutions towards strengthening instructional support to students, particularly for those who are digitally disadvantaged and financially challenged in online and flexible learning.

The study aims to determine the impact of online synchronous class attendance on student academic performance. Specifically, it aims to identify the reasons for students' absenteeism in online synchronous classes, analyze if attendance in online synchronous classes has contributed to improving the student's academic performance and determine the impact of recorded lectures as instructional support in asynchronous learning.

2. Literature Review

2.1. Challenges in online and flexible learning

Onyema et al. (2020) noted several detrimental effects of the pandemic on education, such as disruptions in instruction, less access to educational and research facilities, job losses, and higher student debt. In the Philippines, some challenges faced by students include work and family responsibilities, inadequate internet connection, lack of computers and devices to contend with remote learning, and other technological setbacks. Key elements that contributed to students' learning issues included a lack of access to technology and the

internet, a lack of learning materials, little prior experience with online learning, and access to broadband and technology are part of a digital divide that "remains a persistent barrier" (Carrasco, 2021). Students from low-income families were more likely to have limited access to technology and the internet than their peers. This is consistent with the findings of Rotas and Cahapay (2020), who cited several difficulties in remote learning. These include intermittent internet connectivity, a lack of learning resources, power outages, unclear lesson content, too many activities in a lesson, poor peer communication, a lack of teacher scaffolds, conflict with home obligations, a poor learning environment, financial difficulties, and issues with physical and mental health. Furthermore, some parents lost their jobs due to the closure of several businesses, forcing students to work while studying to contribute financially to the family for food and education expenses.

2.2 Absenteeism in Online Synchronous Classes

The COVID-19 pandemic has changed traditional education at all levels, forcing a move from in-person classes to online learning environments. Online activities and discussions now take the place of once-face-to-face classes. As a preventive precaution against the pandemic, school officials waived the obligation for students to physically attend classes to mitigate the virus' spread (Goulas & Megalokonomou, 2020). Acknowledging the challenges of online and distance learning, many schools granted more flexibility to cater to various student learning circumstances. Implementing asynchronous activities, extended deadlines, decreased coursework, and non-mandatory attendance were a few of the leniencies extended to the students to cope with the challenges of remote learning. In synchronous learning, activities are performed in real-time, necessitating virtual meetings between participants, teachers, and facilitators at the same time and location. However, work and family responsibilities, alongside technological setbacks, prevented students from regularly participating in synchronous online classes and consequently preferred the asynchronous modality, which does not require real-time participation in lectures.

In face-to-face classes, attendance refers to the students' actual physical presence in the classroom. In an online setting, this refers to the student's participation taking place according to the timeline set by the course lecturer (*IGI Global,* 2022). Attendance to online classes had become less mandatory in most institutions compared to the pre-pandemic when strict policies on class attendance were strictly implemented. To a certain extent, this allowed students to participate asynchronously and study at their own pace, and even assume work

and home responsibilities. Similarly, this allowed digitally-disadvantaged students to cope with academic-related activities and responsibilities, such as participating in real-time online lectures where they must have dependable gadgets or devices and reliable and secure internet connectivity to participate online.

Mokhtari et al. (2021) cited numerous reasons why absenteeism is prevalent in online learning, most notably the change in generation and preferences of students where the new generation is more inclined to use educational technologies. Concomitantly, Qutishat and Qawasmeh (2022) observed little student interaction during class meetings. To ensure the successful attainment of learning goals, attendance monitoring is equally crucial to identifying students who have trouble attending and their reasons for absenteeism. A high rate of absences from class is a sign that there are issues that need systemic remedies (*Attendance Policy During the Covid-19 Pandemic*, 2021). Unless these obstacles to online learning are appropriately dealt with, poor class attendance will persist. Mokhtari et al. (2021) suggested that making presentations more exciting and engaging lectures with interactive and innovative lecturing techniques may influence students' attitudes and create an environment that can lower absenteeism. While attendance is not a guarantee of learning, a student who misses class obviously cannot take advantage of the learning opportunity.

2.3 Gauging Academic Performance

Numerous studies show that student engagement improves academic performance (Lei & Zhou, 2018; Farrel & Brunto, 2020). When colleges and universities became more remote, asynchronous structures and other changes to the academic experience came at the expense of student participation and engagement. According to Bryan et al. (2018), students participate more actively in online classrooms when they often interact with others via technology. This accentuates the importance of attending online classes as a venue where students can participate in discussions, interact with other students, and seek clarification from their teacher. In contrast with in-person classes, Wester et al. (2021) noted that students participated less frequently in class discussions in the remote learning environment.

One of the most critical challenges for students in higher education is enhancing their academic performance. Attendance, regular study, diligence, commitment, self-assurance, and family support significantly impact undergraduate students' academic achievement (Islam, 2021). Attending classes and actively participating in lessons are requirements for learning; hence, attendance is seen as a crucial component of a student's academic success

(Mokhtari et al., 2021). It is crucial to evaluate students to determine their level of proficiency for both the growth of learners and to safeguard the quality of school systems.

York et al. (2015) proposed a theoretically supported definition of academic success that includes six elements: academic success, satisfaction, skill and competency development, perseverance, attainment of learning goals, and career success. However, the authors concur that grades and GPA are the most often utilized indicators of academic accomplishment. Nearly all indicators of academic success are measured by grades- either assignment or course and grade-point average (GPA). This is understandable because grades and GPA calculations are institutions' most easily accessible evaluations.

2.4 Recorded Lectures as Instructional Support

In the past, face-to-face (F2F) interactions between students and instructors have taken place in a classroom at a regularly scheduled time, frequently on multiple days per week. In these classes, lectures predominate when students listen to the instructor give information (Davies et al., 2016). In response to the pandemic, students and teachers quickly transitioned from physical settings that offered them much-needed social contact to spending hours per day in front of a screen. Today, the use of technology in higher education has become more common, and universities attempt to meet the needs of the younger generation who have grown up in the information technology age. Technology has played a crucial part in providing students with education outside of the classroom, where all countries could implement remote learning technologies employing a combination of radio, television, online, and mobile platforms (*Education and Technology*, 2021). Digital technology in education has allowed educators to develop innovative approaches to how, where, and when students learn.

One of these innovative approaches is utilizing various learning management systems and online learning platforms. An online learning platform is a website or educational materials and content portal that provides students with all the required information in one location, including lectures, resources, chances to interact with other students, and more. Additionally, it is a great tool for the teacher and the student to track their progress (*What Are Online Learning Platforms*, 2021). Aside from providing access to educational materials and venues for online interaction, one of the affordances accorded by technology is the various ways to record online lectures. The National Privacy Commission (NPC) confirmed that the processing of personal data occurred during the upload and storage of an online class

recording. As a result, any online class activity must follow Republic Act No. 10173 or the Data Privacy Act of 2012 (Lokin, 2022). Universities have adopted this practice for numerous practical reasons. Teachers record lectures and class sessions so that students can watch and revisit them at any time, and students with poor internet connectivity at home and those working found this option helpful. There are many different screen recording programs available online and as desktop programs. Other video conferencing programs and learning management systems such as Zoom, Google Meet, and MS Teams have built-in recording apps that may be used to record actual lectures.

Students can access recorded lectures anytime and anywhere. According to research, students choose courses that have online recordings to make up for missed lectures, prepare for exams, and enhance their recollection of lecture materials (Gorissen, 2012). Furthermore, recorded lectures give students more control over their schedules and learning and allow them to review lectures at their own pace and at a time and place. Recorded lectures can be given and reviewed at any time and are usually shorter due to the removal of interrupting activities during a live lecture (Horn, 2020). Re-watching lectures increase comprehension of the presented content and result in higher exam scores. While recorded lectures may be less engaging and interactive, Elliot and Neal (2016) found that students value lecture recordings and use them more frequently than previously noted in the literature. They concluded that lecture recordings significantly assist students' independent study. Moreover, providing more options gives more flexibility to students who cannot attend class due to illness, those whose schedules conflict with lectures, those who struggle with the time of the lectures, or those who might find it challenging to follow a live lecture. According to Horn (2020), one drawback of recorded lectures is that they may lead to a decrease in class attendance, a restriction in the teaching style, and a reduction in one-on-one engagement. Hence, recorded lectures should be viewed as supplementary materials, and attendance in online lectures must still be encouraged.

3. Methodology

This study used a descriptive correlational method of research. The study was conducted at one state university in the Philippines, which shifted from face-to-face to online and flexible learning. The study used a purposive sampling method, a non-probability sampling technique where researchers select participants from the population for their surveys in accordance with their evaluation. The participants in this study were second-year

BS Industrial Technology students enrolled in IT 211 (Intellectual Property Rights) in the 1st Semester of AY 2021-2022. This group was chosen to participate in the study because they have become accustomed to flexible learning modes of college life. Moreover, only one faculty handled the subject; thus, all students had the exact course requirements and followed the same grading system.

The table summarizes the distribution of participants (n=210) according to sex, field of specialization, age, and employment status with their corresponding attendance rate in online classes.

Table 1

Demographic Characteristics

Characteristics	Frequency	Percentage
Sex		
Female	65	30.95%
Male	145	69.05%
Field of Specialization		
Architectural Drafting	54	25.71%
Automotive Technology	35	16.67%
Electrical Technology	39	18.57%
Electronics Technology	36	17.14%
FBPSM	46	21.90%
Age Range		
19-21	171	81.43%
22-24	26	12.38%
Above 24	2	0.95%
Not indicated	11	5.24%
Employment Status		
Not working	134	63.81%
Works/employed full-time	15	7.14%
Works/employed part-time	50	23.81%
Not indicated	11	5.24%
Total	**210**	**100.00%**

As indicated in Table 1, most participants were male (69.05%), and the rest were female (30.95%). In terms of specialization, the majority are Architectural drafting majors comprising 25.71%, followed by FBPSM majors with 21.90%. Historically, most BSIT students enrolled in these two fields of specialization. Automotive, Electrical, and Electronics majors registered below 20% of the student population. About 81.43% belonged to the 19-21 age group, followed by the 22-24 age range with 12.38%, and less than 1 percent was above 24 years of age. More than half of the respondents are not working (63.81 %). This group is more likely to attend online classes regularly since they do not have work responsibilities.

About a quarter of the participants (23.81%) are employed part-time, while 7.14% work full-time.

The data were collected using an online survey of close-ended questions using Google Form administered on February 15-21, 2022. The link to the online questionnaire was posted on Google Classroom, where all students were invited to participate. Likewise, the attendance tracker app recorded the student's attendance in online classes via the Google meeting. Meanwhile, the final grade in the course was used as an indicator of academic performance.

A scatter plot was also used to visualize the relationship between the two variables-attendance and academic performance. The values for two different numerical variables are represented by dots in a scatter plot, also known as a scatter chart or scatter graph. The position of each dot on the horizontal and vertical axes shows the values for each data point. The correlation coefficient was also computed using the Pearson R formula in Microsoft Excel to establish the strength of the relationship. The descriptive method was used to describe the respondents' profile, the frequency of use of recorded lectures in asynchronous learning, and the reasons for not attending synchronous online classes. The data was visualized using graphs and tables.

4. Results and Discussion

Guided by its objectives, this paper describes the participants' demographic profile, identifies why some students failed to attend online classes regularly, and explains the purpose and frequency of watching recorded lectures. Ultimately, this study determines the correlation between attendance in online synchronous classes and academic performance and establishes the strength of the linear relationship between these two variables.

4.1. Attendance in Synchronous Online Classes

Attendance in online classes has become less mandatory in most institutions compared to the pre-pandemic, where policies on class attendance were strictly implemented. To a certain extent, this allowed students to study at their own time pace and without sacrificing their work and home responsibilities. Table 2 demonstrates the frequency of attendance in online classes.

Table 2

Attendance in online classes

Attendance	Frequency	Percentage
0-20%	27	12.86%
21-40%	20	9.52%
41-60%	21	10%
61-80%	52	24.86%
81-100%	90	42.86%
Total	**210**	**100.00%**

In terms of attendance in online classes, almost half (42.86%) were able to attend classes regularly, with 81-100% attendance. About a quarter of the class (24.86%) attended about 61-80% of the online classes. It is important to note that 12.86% of the participants were able to attend only once or twice, while some could not attend any classes. The poor attendance of about one-third of the class could be explained by the fact that some students have to work full-time or part-time while others do house chores. At the same time, others struggled with poor internet connections and a lack of reliable devices. This is exemplified in the study conducted by Dhingra et al. (2021) that although most students were motivated to participate in the online sessions, their motivation was affected by outside factors like internet connectivity and the home environment.

Table 3

Reasons for not attending online classes

Reasons for not attending online classes	Percent
Works full-time and part-time	37.80%
Poor internet connection in our area	35.37%
Due to other responsibilities, such as house chores	20.12%
Sick or other health reasons	4.27%
No gadgets to be used for online classes	2.44%

Students face some challenges, which include work and family responsibilities, inadequate internet connection, lack of computers and devices to contend with remote learning, and other technological setbacks. In one way or another, this hinders students from attending synchronous classes. The various reasons for absenteeism are shown in table 3.

As observed, work and poor internet connection are the primary reasons that hinder students from attending synchronous online classes. The majority (37.80%) of the participants work part-time or full-time. This is closely followed by poor internet connection (35.37%) as a reason for absenteeism. This is consistent with the findings of Bahian et al. (2020) that one of the challenges to online learning is dealing with personal circumstances like working for additional income alongside technical and institutional barriers. Internet connectivity problems were likewise observed among information technology education (ITE) students at various state universities in the Philippines, where only a few students have access to a fast internet connection (Balahadia, 2021). Similarly, Khanlarian and Singh (2015) found that, as evidenced by the poor scores of students in an online group, technology, and frustration are significant factors that have an impact on performance. Other responsibilities, such as house chores (20.12%), placed third. At the same time, few indicated health (4.27%) and lack of gadgets (2.44%) as reasons for being unable to attend online classes. Most students, especially those who live in remote locations, do not attend virtual classes often since they cannot attend due to work, not having a cell phone, an internet connection, or a heavy workload (Matildo and Dagonon, 2020). Moreover, dependable gadgets or devices are likewise indispensable for students to participate in classes online, aside from reliable and secure internet connectivity. Mental health was also one of the prevalent concerns amidst the pandemic and remote learning. Several studies found that mental health issues significantly affected students' learning outcomes. Students were subjected to prolonged lockdowns and experienced social isolation and disruption of daily life. Students' anxiety levels rose due to the uncertainty of their lessons during the lockdown, which had a detrimental effect on their academic behavior and poor academic performance (Kulal & Rahiman, 2023).

4.2. Purpose and Frequency of Use of Recorded Lectures

With the advancement of ICT, universities have increasingly used recorded lectures and made them available online for students. Access to the recorded lecture may improve learning because students can review the material more than once to comprehend the lesson. Recorded lectures also allow students to tailor learning around their other commitments (*Benefits of Lecture Recordings, 2021*). According to Niewoudt (2020), university instructors record synchronous virtual classes and make the recordings available to students. Students can access recorded lectures anytime and anywhere. According to research, students favor

classes with online recordings to replace missed lectures and exam preparation and improve the retention of lecture materials (Gorissen, 2012). Furthermore, recorded lectures give students more control over their schedules and learning and allow them to review lectures at their own pace and at any time and place.

A variety of screen recording software is available online and in a desktop application. In this study, two recording apps were used in the course – the built-in recording in Google Meet and the OBS Studio. Actual online lectures were recorded and uploaded on Google Classroom, accessible to all students. This allowed students to listen to and watch the lectures and discussions made during the online class. This succeeding section demonstrates the purpose and frequency of the use of recorded lectures among students.

Table 4

Purpose and Frequency of Use of Recorded Lectures among students

Purpose and Frequency of Use of Recorded Lectures	Percent
I watched SOME recorded lectures to compensate for the missed online classes.	64.00%
I watched recorded lectures even if I have attended online classes regularly.	22.00%
I read the lesson's presentation (PPT), SLM, and other resources for the weekly topics.	6.00%
I DID NOT watch recorded lectures because the lectures presented during the online class were sufficient to understand the topic.	4.50%
I WAS NOT able to watch the recorded lectures due to various reasons (no gadget; no stable/poor internet connection; busy with house chores and other things)	3.50%

As shown in table 4, more than half of the students (64%) watched recorded lectures to make up for the missed synchronous online class. Full-time students who devote considerable time to attending classes still watch recorded lectures to review the lessons (22%). Meanwhile, only few relied on materials such as PowerPoint and SLM for the weekly topics (6%). Several studies suggest that re-watching lectures increases comprehension of the presented content and results in higher exam scores (Horn, 2020). Many students used recorded lectures as a substitute for in-person lectures (Bos et al., 2016). Students prefer online lecture recordings to replace missed lectures because it gives them access to lectures at any time and from any location (Gorissen, 2012). However, several teachers noticed that recorded lectures resulted in lower class attendance, a more constrained teaching environment, and lower one-on-one interaction (Horn, 2020). Results also show that poor

internet connection and other responsibilities, such as household chores, are hindrances for some students who cannot access recorded lectures regularly.

4.3. Class attendance and academic performance

The following section demonstrates the impact of attendance in online classes on the student's academic performance. The student's attendance in online classes via Google Meeting was recorded, and their final grade was considered the primary indicator of academic performance. As discussed in the previous section, work is one of the primary reasons why students cannot attend synchronous online classes. The academic performance measured in terms of final grades among working and non-working students. As illustrated in Table 5, those not working tend to get a higher grade than their peers working full-time or part-time. Participants who were not working and able to attend synchronous online classes regularly obtained the highest average percentage rating of 85.10%. This is followed by those who work part-time with a 79.45% average rating. The lowest average rating (71.98%) belonged to working full-time. Nonis and Hudson (2006) argued that although work had no direct impact on academic performance, motivation and study time were non-ability elements that had a significant impact on academic performance. Working students spend less time studying due to other responsibilities and are made worse by not having time to attend and participate in class discussions.

Table 5

Average final grade average by work status

Work Status	Average final grade in %
Not working	85.10%
Works/employed FULLTIME	71.98%
Works/employed PART-TIME	79.45%

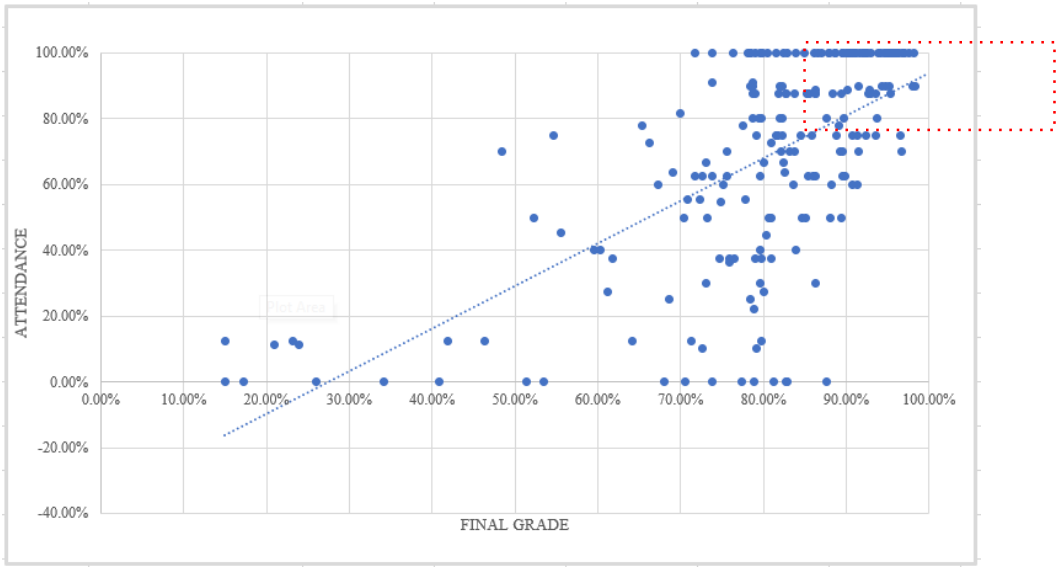
Numerous studies show that student engagement improves academic performance (Lei & Zhou, 2018; Farrel & Brunton, 2020). Students participate more actively in online classrooms when they often interact with others via technology. This accentuates the importance of attending online classes as a venue where students can participate in discussions, interact with other students, and seek clarification from their teacher. Several studies show that attendance in online classes has moderately contributed to improving academic performance (Zhu et al., 2019; Hsu & Plunkett, 2016).

The subsequent discussion aimed to establish the relationship between lecture attendance and the student's academic performance.

As illustrated in Figure 1, students whose attendance is at most 80% obtain a relatively higher final rating, as indicated by the dotted box. Similarly, those who attended 60-80% of the total class time also passed the course fairly. This is similar to the findings of Hsu & Plunkett (2016), that show attendance positively affects student performance in various disciplines. According to them, there is a significant relationship between attendance in online classes and academic performance. The trendline displays the general pattern or overall direction of the data. Statistically, a moderate positive relationship exists with a 0.65 correlation coefficient. A positive correlation means that as one variable rises, the other variable also tends to rise (Frost, 2022).

Figure 1

Positive Relationship between lecture attendance and final grade using a scatter plot



However, it is worth noting that some students who cannot regularly attend online classes and merely rely on recorded lectures and other instructional materials available on Google Classroom also managed to perform well. As illustrated in the previous section, half of the students watched recorded lectures to make up for the missed synchronous online class. Recorded lectures allow students to study at their own time and pace and review the material more than once to comprehend the lesson fully. Bos et al. (2016) pointed out that many students used recorded lectures as a substitute for lecture attendance. Elliot and Neal (2016) mentioned that lecture recordings significantly assist students' independent study.

This study's results align with those of several studies, which indicate that attending classes has a favorable and significant impact on academic achievement (Dey, 2018; Elbilgahy, 2021; Riaz et al., 2022). However, results also demonstrate that student motivation and availability of instructional materials such as recorded lectures, lesson materials, and self-paced learning modules contribute to academic performance despite the student's inability to attend online lectures.

5. Conclusions and Recommendations

Open and flexible learning has become the norm for schools and universities due to the pandemic, where students get lessons through online classes or study modules. Acknowledging the difficulties in remote learning, many institutions allowed more flexibility by providing learners with increased choice and accessibility to suit their learning conditions. One is making online class attendance less mandatory compared to the pre-pandemic when attendance was strictly implemented in most schools. To a certain extent, this allowed students to study at their own time and pace and even assume work and home responsibilities. The study showed that online class attendance positively impacts students' academic performance. This supports the views of several authors that attendance and academic performance are positively correlated. Students who regularly attend synchronous meetings tend to get a relatively higher final grade. The Pearson correlation coefficient also established a moderately positive relationship between these two factors. Meanwhile, those who could not attend online classes for various reasons, such as work and other responsibilities, poor internet connection, and lack of reliable gadgets, relied on recorded lectures and other materials on Google Classroom to compensate for the missed online classes. The asynchronous learners still managed to get a passing grade in the course with the aid of various instructional support, such as recorded lectures.

While lecture attendance positively impacted students' academic performance, absenteeism could not be avoided for several reasons, such as work, poor internet connection, lack of devices, and other responsibilities. Providing instructional support, such as recorded lectures and supplementary materials, prevented asynchronous students from failing the course. However, this study also recognizes that the availability of recorded lectures might encourage students to refrain from participating in synchronous lectures because attendance is not strictly enforced in online and flexible learning in some universities. It is recommended that more active learning strategies and in-class group work be implemented to avoid non-

essential absenteeism and promote and encourage lecture attendance. As facilitators of learning, teachers should also find ways to energize their lectures and create opportunities for interaction and collaboration. Furthermore, with the gradual re-opening of schools for face-to-face classes, the experiences, skills, and knowledge acquired from online and flexible learning may likewise be applied to improve pedagogical practices as we return to the conventional educational setting.

The results of this study offer immediate policy-making implications for administrators at colleges and universities to formulate a policy to provide continuous capacity-building webinars and training to their faculty and staff, particularly on developing instructional materials that promote interaction and collaboration among teachers and students. Furthermore, aside from the regular monitoring of the student's attendance, finding the causes of the student's absenteeism and their coping mechanisms should likewise be considered so that appropriate student support services will be accorded to disadvantaged students and help them cope with online and learning amid their arduous circumstances.

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Strategies for Online Teaching: A Best Practice Approach Using Three-Domain Theories

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Abstract

As Covid-19 pandemic led to abrupt transformation from face-to-face classes to online learning, questions arise as to which among the lists of teaching strategies can be considered as the best practice for online learning. Hence, this study assessed the best practice approach for online teaching from the three-domain strategy theories: behaviorism; cognitivism; and social constructivism from the lived experience of professors in the Asian Institute of Maritime Studies in the Philippines. The relationship between the teaching strategies and the demographic profiles (age, years of teaching experience, and highest educational attainment) was included to identify factors that could affect the teaching strategies. Using descriptive-correlation design, the study endeavored to describe the teaching strategies of the thirty non-laboratory maritime professors who were selected using complete enumeration sampling. The online platform researcher-made questionnaire was made through Google forms to gather data and distributed to the professors after ensuring the permit, via Microsoft Teams Software, Facebook messenger, or Google mails. To treat the data, percentage, weighted mean, and chi-square were used. Results indicated that the respondents highly utilized the direct instruction strategy under the behaviorism theory followed by flipped instruction strategy under the social constructivism theory and chunking instruction strategy under the cognitivism theory. The chi-square result indicated no significant difference between the teaching strategies and demographic profiles of the professors.

Keywords: *online teaching, teaching strategies, three-domain theories, AIMS Maritime Professors*

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1. Introduction

The pandemic produced various difficulties affecting not only the country but also the learning standards. While the COVID-19 drastically changed the teaching capabilities of the school, some programs inevitably developed new paradigms to sustain educational instructions. For instance, maritime schools are equipped with the simulator for a future seafarer, making professors teaching styles improved, but the pandemic made them rely on e-learning classrooms. In the Philippine setting, the Asian Institute of Maritime Studies was capable of sustaining an online class, but with the consistent changing of rules for the pandemic, some professors could not bring the best teaching compared to their face-to-face class, making it worse for the graduating students (Murphy, 2020). As institutions and universities implement the online classes, the requirements in terms of decisions and choices should be considered for the enhancement of learning strategies as well as student expectations. Similarly, in a practical-based or output-based programs, professors have different tactics to present their ideas while meeting the school requirements. For example, the synchronous class takes place in actual time where students and instructor interact in an online platform for a set period of time. In this way, the lecture is being conducted the same way as the face to face class but through video conference. On the other hand, asynchronous learning is a strategy where students are given a certain time frame to study the material and accomplish the given activities to them.

Although the use of technology in education is not new, the idea of using an online platform as an alternative way for learning can be considered as a good scheme to address the pandemic. However, the unplanned and immediate shift to online learning led to new problems in the teaching and learning. Some of the instructors experienced difficulties in adjusting to the new system (Kamal & Illiyan, 2021; Sahito et al., 2022; Mahyoob, 2020; Siddiquei & Kathpal, 2021; Zheng et al., 2021; Barrot et al., 2021) while students struggle in learning their lessons (Zheng et al., 2021; Barrot et al., 2021; Almahasees et al., 2021; Cabual & Cabual, 2022; Moustakas & Robrade, 2022) with limited knowledge or understanding of the basic competencies (Zheng et al., 2021; Hong et al., 2021; Yan et al., 2021; Amer & Ouhida, 2022; Lestari et al., 2022; Alawamleh et al., 2022; Zhang et al., 2022). All these difficulties led to questioning the teaching strategies being imposed during online classes. According to Petrila et al. (2022), Sahito et al. (2022) and An et al. (2021),

teachers use inappropriate strategies to the type of learners. In relation to teaching strategies in the online learning platform, Mahmood (2021) suggests that teachers maintain slow voice, practice vocal functions and share resources before the class help create interactive online classes.

While there are multitude of studies on the online learning experience of maritime programs during the Covid-19 pandemic (Masuku, 2020; Renganayagalu et al., 2022; Karaca & Söner, 2022; Matsouka et al., 2022; Lokuketagoda & Miwa, 2022), there are only few studies on the teaching strategies of maritime professors during the pandemic. Given the difficulties experienced during the online classes of practical-based programs such as Maritime, this study aims to identify the teaching strategies implemented at Asian Institute of Maritime Studies (AIMS) during the Covid-19 pandemic. The AIMS offers maritime courses delivered by mostly retired seafarers turning into professors. The maritime professors are considered foundation of the institute through teaching the students the proper behavior and discipline. Using the three domain theories, behaviorism, cognitivism, and social constructivism, this study evaluated the best approach based on the lived experiences of the maritime professors. Specifically, the study profiled the teaching strategies under the three domain theories and evaluated any significant relationship between the demographic profile of the professors and teaching strategies. This study argues that:

H_0. There is no significant relationship between the teaching strategies and the demographic profile of the maritime professors.

2. Literature review

2.1. Online Teaching Strategies During COVID-19

While most maritime professors are well trained on face-to-face laboratories and simulation classes, they had hard time adjusting to the online teaching platform. For example, most students only used mobile enabling limited teaching methods that require more than a mobile gadget. Professors have had to readjust their teaching strategies and methods to attract students in, keep them engaged, and secure interaction within various exercises in the online education of classes (Hubbs & Lee, 2021). In the light of the heated discussions on effectiveness of online learning, scholars have discovered that undergraduate education can be just as prosperous in online courses as in in-person sessions (McDougall et al., 2021) but online classes, though more accessible, requires internet connection and gadgets. An efficient implementation approach works by assuring that all professors are qualified and positive with

the explanations they are supposed to employ, from interactive presentations and 1:1 device to software that powers online education (Castelo, 2020). With this, teachers should create an opportunity for a helpful online community for students to learn. As such, online professors are required to be appealing and approve student's benefit from the start and for the span of the education, to sustain an efficient learning community (Cooper, 2016). Furthermore, the teachers must engage and be supportive of the students' learning. Learning is not limited to one thing; teacher must be available, especially presence must be there for the whole duration of the course to monitor and maintain the students' learning to an effective knowledge community. According to Ralph (2020), teachers cannot just make materials available online. As a teacher, for the adaptation of the instructional process to online format, they should choose content prudently where every student is engaged in rich activities.

According to Goldberg (2017), blended learning is most desirable for developing knowledge, it is additionally the most reliable method to teach the information which holds the skills mariners need. This includes all the hands-on features of skills and simulations of various activities in which can be applied for every opportunity to existent circumstances to the student. It also offers improving skill training and making the student have an excellent performance. However, the difficulty with this strategy is that once each learner achieves their postings and acknowledgements, they frequently quit reading, reacting to, and interested in what others say or think about the subject or topic supporting study, thus missing out on useful insights and participation (Turk, 2021). As a result, students only acquire a few learning and this is one of the reasons why they cannot answer in recitations and even fail an exam. At the end of the day, students are the ones who suffer. According to Schroeder (2020), the inadequate materials are hardly classified to these modes of online teaching and e-Learning. Most of the maritime schools are conducting laboratories physically since it is a hands-on program, which cannot be completely compensated by the online teaching.

In the Philippines, synchronous and asynchronous approaches are prominent tactics used by teachers in online classes to encourage students to participate and learn new things. In synchronous modality, instructors and students meet online using video conferencing software during the designated class hours and instructors give lectures on the course (Lapitan et al., 2021). This online strategy is almost the same as face to face class where students can interact with their instructors. The only difference is that it is being conducted with the use of technology. On the other hand, asynchronous learning is a teaching approach

in which students are given a specific amount of time to study a subject and complete the activities that have been allocated to them. With limited resources, the different approaches lead to the prospect of cultivating a culture of knowledge and inquiry within distance learning, especially via social media. Accordingly, support system has been developed in achieving a high-quality education applying technology-assisted interventions (Marquez et al., 2020). This teacher-led type of learning focuses on organizing and delivering the content to achieve the objective that is needed for the students to understand and be able to learn through online classes.

Using all available means when it comes to learning and teaching, the idea led to the use of flexible learning as "more encompassing than online learning" (Joaquin et al., 2020). It includes the application of digital and non-digital technology and covers both face-to-face/in-person education and out-of-classroom learning methods of delivery or a blend of modes of delivery. As university transition and adjust to the new normal in the higher education aspect, they must be provided with ongoing assistance, education, and improvement and be implemented with ways to further fully understand and increase the opportunities that online education presents (Moralista & Oducado, 2020).

2.2. Theoretical Framework

This study is anchored on the social constructivism, behaviorism and cognitivism theories. One of the education theorists is John Dewey, in which he proved the use of social constructivism – known as a sociological theory that mainly focus on the knowledge in which the development of human is socially related while the knowledge can be acquired through interaction with others. Based on several studies and theories, social constructivism was stated, explained and described that teaching and learning as complex interactive social phenomena between teachers and students. The teacher provides a social environment in a way that students can be able to construct or assemble their knowledge that is necessary to solve the problem.

In regard to the application to distance education, which can be related to the study of psychology known as the cognitivism – wherein it is known to mainly focus on the processes of mental ability of individual, which includes how they were able to think, learn, perceive, and direct their attention from one stimulus rather than the another. The cognitive theory was theorized by Richard Mayer (2003), who is famously recognized for his cognitive theory of multimedia learning. Mayer states that learner-centeredness "*is not what is done to the*

learner, but how the learner interprets what happens, that is, on the learner's personal experience." His theory is based on numerous primary hypotheses: auditory and visual are the two separate ways to process learning. Every channel has a limited capability, and the learner can only handle a limited amount of knowledge in one channel apart. The mind does not perform a multimedia display of information, images, and auditory information in a commonly particular fashion; preferably, these elements are chosen and constructed dynamically to create logical mental constructs. Learning is an on-going process of filtering, deciding, planning, and combining information based upon prior learning, and the student makes sense of incoming knowledge by actively constructing mental representations. Meanwhile, behaviorists learning theory is made on the idea that the brain is a "black box," or a blank slate. Knowledge happens when behaviorists observe conditioned and fit student reactions responses, to the performance of controlled environmental stimulus conditioning (Harasim, 2012).

3. Methodology

This study was designed as a quantitative study, aiming to understand the teaching strategies of AIMS maritime professors under the online teaching. According to Creswell (2013), quantitative research emphasizes objective measurements and the statistical, mathematical, or numerical analysis of data collected through polls, questionnaires, and surveys, or by manipulating pre-existing statistical data using computational techniques. Hence, this study is descriptive that uses questionnaire to obtain necessary data. According to Calderon (2008 as cited by Alberto et al., 2011), the descriptive method is also known as statistical research that describes data and characteristics about the population or phenomenon being studied. It considers two variables and compares it to conclude that one is better than the other. According to Zikmund (2003), this method helps in obtaining complete and precise information.

The participants of the study include 30 non-laboratory maritime professors of AIMS. The study employed quota sampling, a non-probability sampling not based on the probability of appearance, ensuring final sample meets the criteria of the participants required in this study. The demographic characteristics of the participants include: years of teaching experience (46% - 5 years and below; 37% - 6 years to 10 years; 17% - 11 years and above); age (33% - 36 to 50 years old; 30% - 35 years old and below; 30% - 51 to 65 years old; 7% -

66 years old and above) and educational attainment (64% - college degree holders; 10%- with Masters units; 23% - Master's degree; 3% - with doctorate units.

The study used three types of teaching strategies indicated from the list of effective classroom teaching strategies provided by Chris Drew (2019) as the questionnaire to test the different types of teaching strategies. In addition, the revised questionnaire was written into first person questions. The teaching strategies and items selected from the scale are:

Behaviourism theory. The study uses direct instruction as one of the teaching strategies, wherein, it is a teacher-centered approach that involves the teacher using simple straightforward language to explain concepts to students. Traditionally, direct instruction was embraced by behaviorists who believed in teacher-centered teaching. Today, it is used in most teaching approaches.

Cognitivism theory. The study uses chunking as one of the teaching strategies, wherein, it involves presenting information in manageable 'chunks' to allow students to sufficiently process information before moving on to the next section of a lesson or task. It is theoretically linked to cognitive overload theory: if students are given too much information, their mind becomes 'overloaded' and they are unable to process more information. A person has only limited amount of working memory space in his mind.

Social Constructivism theory. The study uses flipped instruction as one of the teaching strategies that involves asking the students to complete the reading, preparation and introductory work at home. The teacher can spend more time supporting students in a student- centered environment.

The first part of the questionnaire seeks to find the demographic profile of the maritime professors which includes their name, age, years of teaching experience, and highest educational attainment, while the second part seeks to find the teaching strategies of the professors scaled using 5-point Likert style. The distribution of items is reflected in table 1.

Table 1
Distribution of the Items in the Scale

Teaching Strategies Scale	Item Number	Number of Items
Direct instruction (behaviorism theory)	1,4,7,10,13,16, 18	7
Chunking (cognitivism theory)	2,5,8,11,14	5
Flipped instruction (social constructivism theory)	3,6,9,12,15,17	6
Total number of items		**18**

The first step in the data gathering was to ask permission in the school departments to conduct the survey through an online platform. Then, questionnaire was distributed to the

professors after ensuring the permit via Microsoft Teams Software, Facebook messenger or Google mails. While conducting the survey, the researchers explained the purpose and significance of the research thoroughly to the participants. The questionnaire was issued the day after the reliability coefficient was calculated. Reliability coefficient measures the accuracy of a test from measuring same individual twice and computing the correlation of the two sets of measures. Questionnaire is collected the day after the respondent answered. The gathered data were treated with percentage, weighted mean and chi-square.

4. Findings and Discussion

The teaching strategies utilized by the respondents during online teaching are presented in table 1.

Table 1
Utilization of Different Teaching Strategies

Statement	WM	Interpretation
Direct Instruction Strategy Using Behaviorism Theory		
I do a teacher-centered approach that involves the teacher using simple straightforward language to explain concepts to students	4.20	Often
I provide clear and direct knowledge to students	4.53	Very often
I followed up with other teaching strategies that involve more active learning so students Can practice and demonstrate their knowledge	4.30	Often
I present the learning objectives for lessons, activities, and projects, and then making sure that learners have understood the goals	4.4	Often
I let my students ask questions to make sure that students have understood what has been taught	4.53	Very often
I am correcting the deficiencies and mistakes in students' output	4.23	Often
I encourage the students to take notes during the lesson	4.67	Very often
AWM	**4.41**	**Often**
Chunking Instruction Strategy Using Cognitivism Theory		
I only teach two or three key points per lesson	3.23	Sometimes
I provide a lot of discussion and practice time before moving on to presenting new information	4.23	Often
I consistently use formative assessment and reflection in action during the lesson to see when is the ideal time to move on	4.07	Often
I break larger amounts of information into smaller units	3.97	Often
I group information into manageable units	4.17	Often
AWM	**3.93**	**Often**
Flipped Instruction Strategy Using Constructivism Theory		
I assign a video introducing a concept for homework	3.83	Often
I spend the first 10 minutes of the lesson assessing students' comprehension of the video	3.83	Often
I jump straight into student-centered practice tasks	3.20	Sometimes
I talk around the class helping students who need additional support for the rest of the lesson	4.37	Often
I apply what the student learned in class the following day through a variety of exercise or tasks, while I act as a mentor or guide	4.20	Often
I ask my students to provide additional information about the subject and elaborate the information they present	3.96	Often
AWM	**3.96**	**Often**

Legend: 1.00-1.50 (Never); 1.51-2.50 (Rarely); 2.51-3.50 (Sometimes); 3.51-4.50 (Often); 4.51-5.00 (Very often)

In terms of direct instruction strategy, it can be noticed from the table that three (3) of the indicators were rated "very often", with "*I encourage the students to take notes during the lesson*" having the highest weighted mean of 4.67. Previous research studies demonstrate that learners are prepared to acquire the development but needs innovation, leading to the transmutation of conventional face-to-face education to different learning methods (Fageeh, 2011). In this case, teacher-led type online classes assumes big portion of learning depends on the teacher. On the other hand, the statement "*I do a teacher-centered approach that involves the teacher using simple straightforward language to explain concepts to students*" has the lowest weighted mean of 4.20 (often). As a whole, the respondents "often" utilize the direct instruction strategy during their online teaching as reflected by the average weighted mean of 4.41 (often).

In terms of chunking instruction strategy, the indicators were rated "often", with the statement "*I provide a lot of discussion and practice time before moving on to presenting new information*" having the highest weighted mean of 4.23. On the other hand, the statement "*I only teach two or three key points per lesson*" has the lowest weighted mean of 3.23 (sometimes). In general, the respondent-professors "often" use the chunking instruction strategy during their online teaching, as evident from the average weighted mean of 3.93 (often). In terms of flipped instruction strategy, the indicators were rated "often", with the statement "*I talk around the class helping students who need additional support for the rest of the lesson*" having the highest weighted mean of 4.37.

Figure 1

Distribution of the Respondents as to Frequent Teaching Strategies Utilized

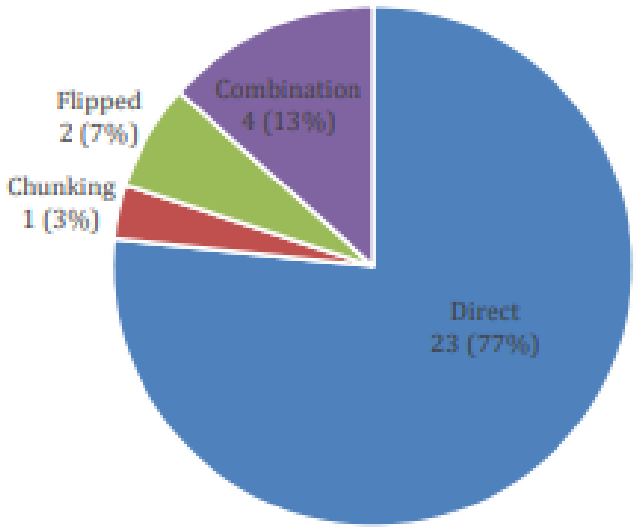

Figure 1 shows the distribution of the professors as to frequent teaching strategy during online teaching. It can be seen from the graph that more than three-fourths (77%) utilize direct instruction as their main online teaching strategy. Teaching in face-to-face classes is different when teaching online, so teachers provide new strategies for students suitable for online classes. This is a teacher-led type of learning focused on organizing and delivering the content to achieve the objectives needed for the students to understand and learn. In this method, professor has more comprehensive control over student actions. Hence, previous studies suggest professors should devise various activities (Bao, 2020) that can motivate the students. As this teaching style is often characterized as one-way communication, professors should ask challenging problems from learners through online classes (Smith & Diaz, 2004). Furthermore, these actions can guarantee that students are more attentive in learning. On the other hand, only 7% mainly use flipped instruction, and 3% utilize chunking strategy. The remaining 13% of the respondents use combination of at least two main teaching strategies for online teaching.

Table 2

Relationship between Teaching Strategy and Demographic Characteristics

	Teaching Strategies		Chi-Square	p-value	Interpretation
	Direct	Combination & Non-direct			
Years of Service					
5 and below	10	4	0.403	0.526	Not significant
6 and above	13	3			
Age					
35 and below	8	3			
36 to 50	8	2	0.164	0.921	Not significant
51 and above	7	2			
Educational Attainment					
Undergraduate Degree	16	6	0.716	0.398	Not significant
Master's Degree	7	1			

Table 2 presents the results of the analysis on the relationship between teaching strategy and the various demographic characteristics. In terms of years of teaching experience, it can be seen that the computed chi- square is 0.403 with p-value of 0.526, which is interpreted as “not significant”. This implies that the teaching strategy utilized by the professors are the same, regardless of the number of teaching years they have. Similarly, the age of the professors resulted to computed chi-square of 0.164 with p-value of 0.921,

which is interpreted as “not significant.” This also means that the teaching strategy used by the professors are the same, regardless of their age. Lastly, the educational attainment of the respondents showed a computed chi-square of 0.716 with p-value of 0.398, which is interpreted as “not significant”. This implies that the teaching strategy utilized by the professors are the same, regardless of their educational attainment.

5. Conclusion

This study showed that the behaviorism theory, cognitivism theory and social constructivism theory characterized by the teaching strategies as direct instruction, chunking instruction, and flipped instruction, respectively were all utilized “often” by the maritime professors in their online teaching as reflected by the average weighted mean. Of the three domain theories, maritime professors utilized direct instruction as their teaching strategy, which is considered the “best practice.” Furthermore, the results indicated no significant relationship between the demographic characteristics – years of teaching experience, age, and highest educational attainment, and the teaching strategies used in online teaching.

As more than three-fourths of the professors utilized direct instruction as their online teaching strategy, this study recommends professors to maintain the presentation of lessons through different ways and not just only through verbally and visually, but also in pictures, audio tapes, and hands-on formats. Furthermore, part of their responsibilities as a professor is to be able to adapt approaches that are within the preference of the students in different theories such as behaviorism, cognitivism, and social constructivism. Professors should also put into consideration the individual differences when choosing the suitable teaching strategies, and be able to develop his or her teaching strategies that will interest the learners, and get them involved. With the very limited teaching strategy, curriculum developers must establish appropriate and proper implementation of the curriculum that consider the view of both the teachers and learners. Therefore, it was suggested that the people in positions shall provide a model that is suitable to teaching-learning strategies, teaching methods, instructional materials for maritime professors. The educational institution need to develop and enhance the teaching improvement plans addressing the needs of the students in different factors such as pace, process, place, and products to acquire new learning, skills, and teachings.

As this study is limited to 30 participants conducted in a single maritime school, further studies can be conducted with larger sample size and increased number of schools to

increase the likelihood of obtaining statistically significant results which were not found and concluded by the present study. The replication of the present findings with larger samples would increase the possibility of identifying whether such relationship would be statistically significant given a large sample. Furthermore, given a purely quantitative data, future studies should therefore employ some qualitative research technique, such as open-ended questions and interviews to avoid the limitation for in-depth exploration of interaction among professor and their teaching strategies, but more importantly, to supplement the findings from the current study.

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7. Declaration

The authors are given authority to disclose the name of the institution - Asian Institute of Maritime Studies, for the purpose of this study.

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