

Flipped classroom approach for enhancing linguistic competence

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ABSTRACT

Nowadays, technology has become an indispensable instructional tool. Technology-integrated teaching approach has been recognized in research studies as an effective means to address the declination of the English language's linguistic competence of the learners. This research determined the effectiveness of a flipped classroom, a technology-integrated teaching approach, to a specific group of Filipino language learners. Utilizing a quasi-experimental research design, 102 English pre-service teachers enrolled in a state university were selected purposively to be the participants of the study and were categorized into two groups, the very good, and the good groups. The expert-validated pre-post-test questionnaire, course syllabus, and lesson exemplars were used to gather the data on learners' linguistic competence. Results of the paired t-test revealed a significant mean gain of the students' scores both from very good and good groups pre-post the employment of the flipped classroom approach. The flipped classroom approach is one of the technology-integrated approaches to be used to augment the learners' linguistic competence regardless of students' group categories. It is recommended that the flipped classroom approach be used by teachers handling different disciplines delivered in English to mitigate the students' dilemma on English language proficiency.

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1. INTRODUCTION

The English language proficiency of Filipino students is observed to decline based on the results of the 2022 English Proficiency Index [1]. This decline in Filipino students' English level is very significant and needs to be addressed hence, Filipinos are among those Asians who have been tagged as the best English language speakers [2]. This drastic result is also palpable in the group of Filipino learners who are under the instruction of the researchers. For various semesters, their writing outputs such as essays, compositions, and even lesson plans were evaluated, and found that they showed issues in the syntactic grammar of the English language. It is necessary to address this problem since this group of students is taking Bachelor of Secondary Education with a major in English. These learners are millennials who show competency and interest in technology-based instruction. According to Rivera and Bacus [3], technology-based instruction can provide more opportunities for the learners' improvement. With this, the researchers utilized a flipped classroom, a technology-integrated approach, to address the problem of Filipino language learners' linguistic competence in the English language.

Flipping the classroom is a pedagogical model in teaching that inverts traditional teaching where those things that are done by the students in the classroom are done already outside [4]. Flipped learning network [5] described it as “school work at home and homework at school”. Bergmann and Sams [6] said that flipped classroom addressed their problems with students’ poor performance. Poor performance is evident in the linguistic competence of the Filipinos as affirmed by Orbeta and Jose [7] who mentioned that there was a big drop rate of Filipinos who can communicate in English accurately. This finding of Orbeta and Jose [7] was also supported by the decreasing rank of the country in the 2022 English Proficiency Index. Thus, the linguistic competence of Filipinos must be given attention and must be enhanced to maintain the tag of Filipinos as being capable of communicating in English with accuracy and fluency.

Zainuddin and Halili [8] asserted that a flipped classroom enhances students’ achievement, and communication since it provides learners an opportunity to focus on doing tasks that require higher-order thinking. Likewise, the flipped classroom puts the use of communication at its core which gives a chance for language learners to enhance their accuracy in the use of language. This premise is supported by Muldrow [9] who flipped her language class and claimed that the learners acquired the lowest and highest levels of the cognitive domain which increased their proficiency to communicate accurately. Uzunboylu and Karagözü [10] stated that all levels of Bloom’s can be accomplished using a flipped classroom model.

The flipped classroom approach has been studied in various disciplines, English language teaching (ELT) included, and an increasing body of research has elaborated that it has affected positively the learning performances of the students [11]–[13]. For instance, Schmidt and Ralph [14] found out that flipped classroom augmented the learners’ engagement and achievement. The same result in the study of Çakiroğlu and Öztürk [11] who figured out that after the utilization of the flipped classroom approach the learners performed better in speaking, reading, writing, and grammar. According to Chou *et al.* [15], the flipped classroom approach works better than traditional teaching in terms of students’ attitudes and motivation. There is an enhancement in students’ achievement if they show a better learning attitude and motivation towards a certain discipline [16]. On the other hand, Asad *et al.* [17] found out that a flipped classroom is a practical learning approach that increases learners’ engagement, performance, and learning in the class.

As far as the different related works of literature are concerned, there was no discussion on the classification of students based on their grade point average (GPA) where flipped classroom is more effective. Perhaps, this research sought to determine if the flipped classroom is effective for excellent or very good students only, or if it is also effective for fair and/or average or good groups of students. With this, it is found to be the gap of knowledge that has not been discussed in the related pieces of literature and studies perused which is given utmost consideration in this study. Thus, this study aims to answer the following research questions: i) what is the linguistic competence of the pre-service teachers before and after the employment of the flipped classroom approach?; ii) is there a significant difference between the pre-post flipped classroom linguistic competence of the pre-service teachers?; iii) is there a significant difference between the pre-post flipped classroom linguistic competence of the good group? How about the very good group?; and iv) what implications can be drawn from the findings?

2. METHOD

This research study is quantitative and employs a one-shot quasi-experimental design. The respondents of this research were the 102 preservice teachers taking Bachelor of Secondary Education major in English in one of the state universities in Cebu, Philippines with GPAs ranging from 1.4-2.5. This number of respondents is the entire population of the class who during the conduct of this study were currently taking the subject structure of English which focused on the grammatical structure of the English language. The participants and the campus director’s consent was sought before the conduct of this research. The research population was clustered into two. The first half of the group is categorized as very good with a GPA of 1.4-1.9 and the other half of the group is categorized as good with a GPA of 2.0-2.5. They were categorized according to the categories officially provided by the university which is reflected in their transcript of records as shown in Table 1.

Table 1 shows the GPA interpretation which is adopted by the university. From what is shown, it is palpable that the various ranges of GPAs are remarked as excellent, very good, good, and fair. Those learners with a general average of 1.0-1.3 are indicated as excellent learners while those with an average grade of 2.6-3.0 are categorized as fair academic performers. In addition, the learners whose GPAs range from 1.4-1.9 are tagged as very good ones while those with 2.0-2.5 GPAs are considered as good ones. Since the following indicators are the basis for the groupings of the respondents, Figure 1 shows the number of respondents who belong to the indicators identified in Table 1. The indicator shown in Figure 1 is based on the official indicator taken from the office of the registrar of the university where the researchers and the participants are affiliated with. To know in detail the number of participants under each group category is presented in Figure 1.

Table 1. GPA interpretation

GPA	Indicator
1.0-1.3	Excellent
1.4-1.9	Very good
2.0-2.5	Good
2.6-3.0	Fair

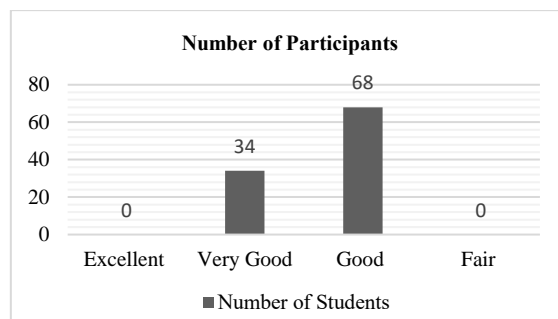


Figure 1. Number of respondents in every GPA category

Based on the Figure 1, 34 out of 102 respondents were identified as very good which means that these students have a 1.4-1.9 GPA while 68 of them are categorized as good with a 2.0-2.5 GPA. On the other hand, no one from the respondents is classified as excellent or fair this is because the entire population of the class was the participants of this study and whatever cluster the respondents belonged to is not in control of the researchers. All of the students taking the structure of English class agreed to participate in the study. It is one of the independent variables of this research. Since the entire population was purposively selected as the participants of the study because the number is small and well-defined. This type of sampling according to Canonizado [18] is known as total population sampling. The total population sampling examines the entire population due to the characteristics that they have. In the context of this research, they show weakness in their English language proficiency and they are taking the structure of English class.

In addition, an expert-validated researcher-made instrument is used which is a hundred-item multiple-choice English grammar test with coverage of the syntactic grammar with emphasis on topics such as subject-verb agreement rules, verb tenses, prepositions, conjunctions, pronouns, adjectives, articles, conditionals, relative clauses, modals, short questions, passive and active voice, direct, and indirect speeches, vocabulary, and word formation processes of the English language. The experts identified to check the validity of the test questions are the 3 English language professors on the campus who have been handling English language classes and majoring in the field of ELT and linguistics. They have been handling English language classes for ten years already in the university and they checked the 100-item multiple choice test given to the students. Likewise, the examination was approved by the program chairperson and the campus director. The exam also follows an equal distribution of cognitive thinking skills based on Bloom's taxonomy level of cognition as this is required by the university. Also, all the topics are covered within the final term of the subject as the final term focuses on the syntax and semantics of the structure of the English language which is why the intervention lasted for three months only. The reliability of the exam was established as a parallel examination in terms of coverage and questioning was administered as a major examination to the previous students taking up the subject. In retrospect, a parallel examination was pilot-tested in the previous academic year already. Pilot testing allowed the researchers to correct the test questions and made sure they adhered to the topics covered as well as followed the standard required by the university. This premise of pilot testing is mentioned by Cleave [19] which ensures the questionnaire's validity and reliability. Those students who answered the examination were also preservice teachers, taking the Bachelor of Secondary Education major in English. After they took the examination, the exam underwent an item analysis and any suggestions for deletion and revision were accomplished and the revised version was approved by the program chairperson and the campus director.

Then, the pre-post-test flipped classroom instruction is administered. It was made sure that all of the participants were added to the official Facebook group account so that they too have equal access to the video lectures and supplementary materials. All experimental sessions were conducted individually. After viewing the video lectures or PowerPoint slides of the lectures, respondents were instructed to interact with one another on the group chat/Facebook group, and more materials were given as supplementary learning materials for them to explore. Data obtained from the pre-post-test were recorded, compared, and analyzed. To determine the significant pre-post mean-gain the paired t-test was used to treat the gathered data.

More so, a flipped classroom model is presented in Figure 2. The flipped classroom model found is adapted from the research study of Alsowat [20] entitled, “an EFL flipped classroom teaching model: effects on English language higher-order thinking skills, student engagement, and satisfaction”. This flipped classroom model is composed of six main parts which are English grammar topics, desired learning outcomes, outside-the-classroom activities, inside-the-classroom activities, students’ projects and presentations, and lastly, summative evaluation. In the aspect of outside the classroom, the creation of a Facebook group account, sharing/uploading of learning materials, students’ viewing/reading the materials, and adding of supplementary materials should be done while question and answer/clarification, students’ engagement, and feedback were accomplished during the inside the classroom meeting. All activities conducted during the face-to-face session were facilitated by the instructor.

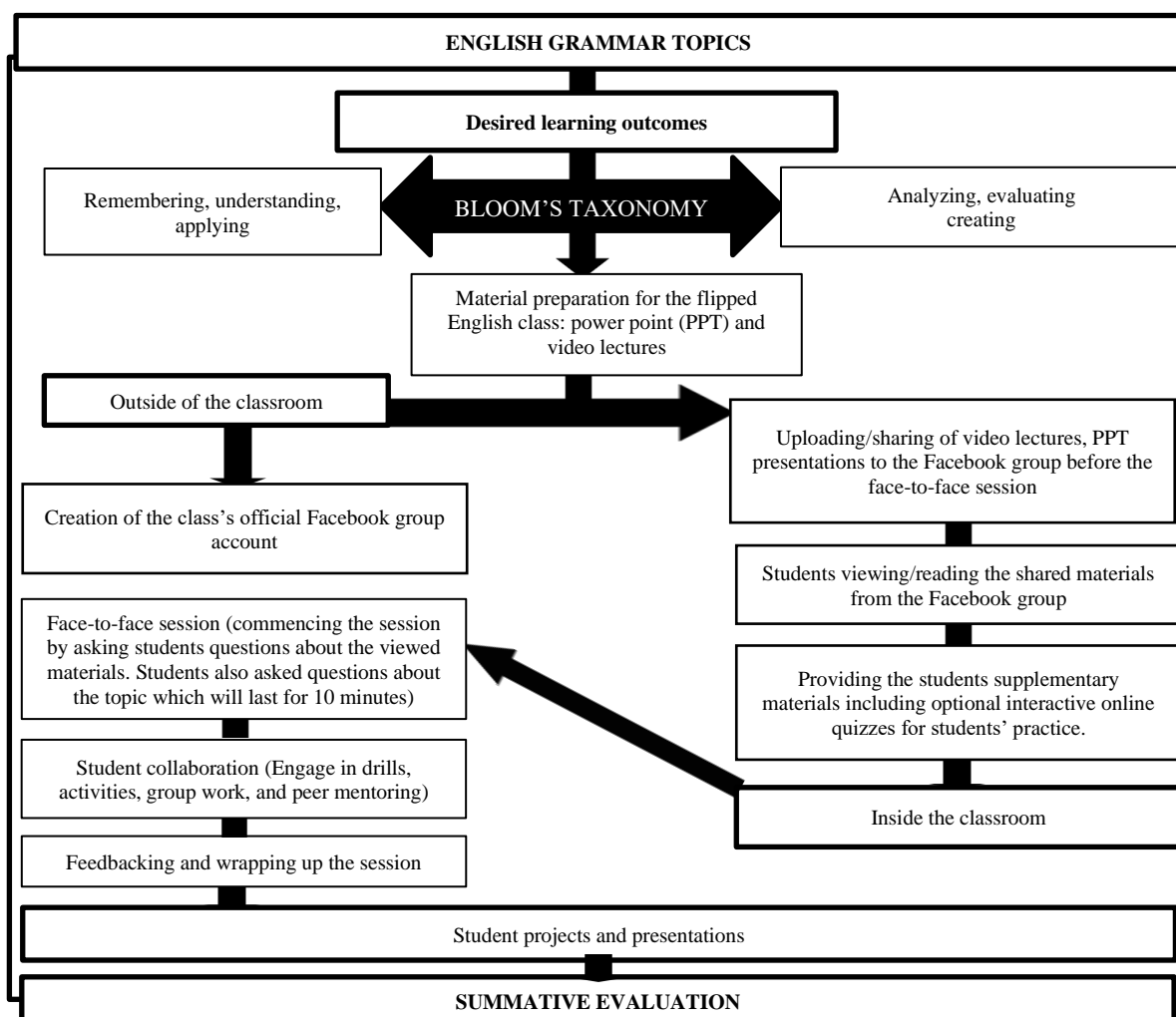


Figure 2. Flipped classroom model [20]

Figure 2 shows the steps followed by the researchers to implement the flipped classroom modality in their English language classes. For accessibility and easiness, they utilized the Facebook group account as the official online classroom where learners can see and access the video lectures/PowerPoint presentations posted, supplementary reading materials, and online worksheets. On the other hand, this study follows the conceptual framework presented in Figure 3. This process was adopted from the study of Alsowat [20].

Figure 3 shows the conceptual framework of the study which provides a clearer understanding of independent and dependent variables working together to achieve the desired results of this academic undertaking. As reflected, this study is grounded on the assumption that the flipped classroom approach augments the linguistic competence of language learners taking up a Bachelor of Secondary Education major in English. To negate or affirm the assumption, the researchers conducted a pre-test (English grammar test validated test) before employing the flipped classroom approach. After which, the flipped classroom model

intervention is employed then, the same set of questionnaires were given during the post-test to determine the mean gain. Then, the effectiveness of the flipped classroom model on students' grammatical competence (very good or good groups) was identified. Moreover, a statistical treatment is utilized to treat the gathered data and determine if the intervention given is effective in augmenting the linguistic competence of the participants of this study which are the Bachelor of Secondary major in English students.

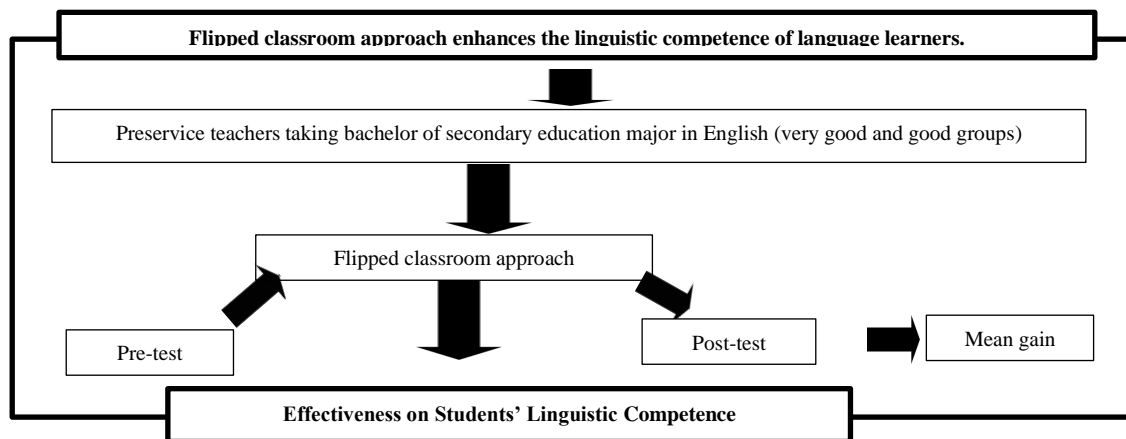


Figure 3. Conceptual framework of the study

3. RESULTS AND DISCUSSION

3.1. Results

This study determined if the flipped classroom approach enhanced the linguistic competence of language learners. The flipped classroom model was used as an intervention for 102 Filipino language learners taking up an English grammar class, specifically the structure of English subject. After the three-month treatment of the observed problem which is the decreasing linguistic competence of Filipino students based on research findings and actual observations of the researchers, they were given a pre-test before the treatment and a post-test after the treatment. The instrument utilized for the pre-test was the same as the one given during the post-test; the post-test was administered after the three-month treatment using the flipped classroom model. Figure 4 shows the pre-post mean scores of the participants while Tables 2 to 4 show if there is a significant difference in the language learners' pre-post mean gain as well as if it is effective for both the very good and good groups or not. Implications drawn from the figures and tables were also explained.

Figure 4 revealed that the learners' mean scores increased in the post-test by two forty-seven hundredths percent. This increase only showed that the flipped classroom approach had helped them augment their scores as it has increased by three and two hundred thirty-five thousandths. The 102 Filipino language learners took the grammar test where topics focused on the syntactic structure of the English language such as subject-verb agreement rules, verb tenses, prepositions, conjunctions, pronouns, adjectives, articles, conditionals, and relative clauses. The increase though might not be huge but enough to claim that the approach employed is effective. During the pre-test, the highest score recorded was 82 points out of 100 perfect scores while the highest score after the administration of the post-test was 87 points. On the other hand, the lowest score garnered during the pre-test was 44 points while 47 points during the post-test. Students were observed to demonstrate most of their errors in the proper usage of prepositions, verb tenses, conditionals, relative clauses, subject-verb agreement rules, and verb tenses while the majority of them showed better understanding in topics like pronouns, articles, WH questions, and direct and indirect speeches. The increase in the participants' scores was not that huge especially comparing the highest and the lowest scores during the pre-test and the post-test. On the other hand, to disclose further the result of this experiment, Table 2 on the respondents' pre-post flipped classroom mean-gain is presented in a matrix including the standard error mean, t-value, and the p-value at 0.05 level of significance.

In Table 2, the p-value presented a significant mean gain between the respondents' pre-post flipped classroom linguistic competence. This result only disclosed that the flipped classroom approach successfully augmented the linguistic competence of the respondents. The student's scores in general increased after the treatment. Thus, the table showed that the employment of the flipped classroom model was effective for the learners who participated in this experiment. Beers [21] mentioned that the utilization of a flipped classroom for a three-month treatment has shown a very significant result as a p-value less than 0.05 is considered statistically significant which means the null hypothesis should be rejected.

Furthermore, the succeeding tables divulge if the flipped classroom is effective in augmenting the language learners' linguistic competence if they are clustered according to their GPA. As aforementioned, there are only two groups of respondents who are identified in this study: the very good and good groups respectively. This uneven number of participants from each cluster is because the respondents of this research are the entire class taking up the subject, structure of English, of which an equal number of students under each cluster is not guaranteed. No participant is categorized under fair or excellent group. In the succeeding tables, the participants' mean gain under very good and good groups were detailed.

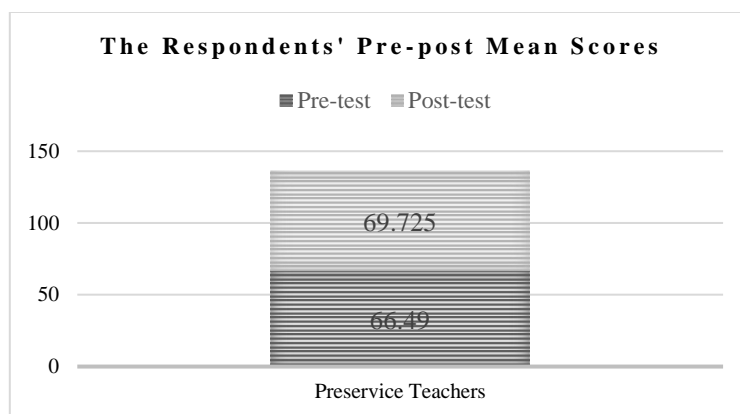


Figure 4. The respondents' pre-post flipped classroom mean-score

Table 2. Respondents pre-post flipped classroom mean gain

Test	Mean	St. Dev	SE mean	T-value	P-value
Pre-test	66.49	8.692	0.861		
Post-test	69.725	7.983	0.79	5.57	0.000
Difference	-3.235	5.867	0.581		

Note: P-value $\leq \alpha$ reject null hypothesis; P-value $> \alpha$ fail to reject null hypothesis

Table 3. Respondents under very good group pre-post flipped classroom mean gain

Test	Mean	St. Dev	SE mean	T-value	P-value
Pre-test	71	5.73	0.98		
Post-test	73.97	6.22	1.07	3.57	0.001
Difference	-2.971	4.846	0.831		

Note: P-value $< \alpha$ reject null hypothesis; P-value $> \alpha$ fail to reject null hypothesis

In Table 3, the p-value presented a significant mean gain among the respondents under the very good group pre-post flipped classroom linguistic competence. The result showed that the treatment employed by the very good students is effective in increasing their competence in English grammar. It is very evident as shown in the numbers. An obvious increase in the main scores of the learners under the very good group is demonstrated such that from a mean score of 71 during the pre-test it goes up to 73.97. There is a difference of -2.971 before and after the employment of the flipped classroom approach. This finding implied that the intervention given was effective to a group of students with GPAs ranging from 1.4 to 1.9. Another conspicuous support is the p-value of 0.001. Mcleod [22] emphasized that a p-value less than 0.05 is statistically significant and indicates strong evidence against the null hypothesis which is the basis of a decision to reject the null hypothesis and accept the alternative hypothesis that there is a significant mean gain among the very good students pre-post flipped classroom test results. Thus, the usage of the flipped classroom approach for three months is effective for 34 very good group students taking the structure of English course.

Moreover, the results for a good group of students are detailed in Table 4. It should be noted that there were 68 respondents under the good group out of 102 participants of this research which comprises 67% of the total respondents. This 67% have GPAs ranging from 2.0-2.5. The p-value in Table 4 showed a significant mean gain between the respondents under the good group pre-post flipped classroom grammatical competence. The result detailed that the treatment employed to the good students is effective in increasing their competence in English syntactic grammar. This is very obvious in the increase of their mean scores

from 64.24 in the pre-test to 67.6 in the post-test with a gain of 3.368 during the post-test. In support, the 0-probability value means that the result is statistically significant thus, the decision is to reject the null hypothesis and accept the alternative hypothesis. The implication of this finding is that flipped classroom is effective for learners whose GPAs range from 2.0 to 2.5 where an average of 1.0 is the highest as far as the university where the respondents are studying is concerned.

Table 4. Respondents under good group pre-post flipped classroom mean gain

Test	Mean	St. Dev	SE mean	T-value	P-value
Pre-test	64.24	9.07	1.1		
Post-test	67.6	7.96	0.96	4.38	0.000
Difference	-3.368	6.346	0.77		

Note: P-value < α reject null hypothesis; P-value > α fail to reject null hypothesis

In comparison, the statistical results between the very good group and the good group showed that the flipped classroom approach is more significant to the good group than the very good group hence the p-value for the very good group is 0.001 while 0.000 for the good group. Hence, according to Mcleod [22], the smaller the p-value, the stronger the evidence to reject the null hypothesis and accept the alternative hypothesis. Though, it is not much of a huge difference. Overall, the results disclosed that the flipped classroom approach is an effective approach to augment the linguistic competence of Filipino language learners regardless if they are very good or good students. This is supported by the study of Al-Harbi and Alshumaimeri [23] whose result after the employment of a flipped classroom model enhanced the English grammar performances of their learners.

3.2. Discussion

The results palpably showed that the employment of the flipped classroom approach is effective for the participants who underwent the intervention and has a very significant increase in their competence in the syntactic grammar of the English language. Such observation supports the same findings of Nuon and Champakaew [24] who investigated the effectiveness of flipping the classroom on the grammatical performance of their learners. Their findings revealed an increase in the students' English grammar after the employment of the flipped classroom model. Their respondents performed grammar academically better in a flipped language classroom. On the other hand, Li and Boden [25], in "flipped classroom: a student experience," said that flipping the classroom model in the teaching of grammar is helpful for the students to master and apply grammar correctly. Likewise, Cadiao and Tan [26] revealed similar findings as the flipped classroom model had improved the English grammar proficiency of their Filipino language learners.

This finding aligned with Yeşilçınar [27] flipped classroom who shared that flipped classroom increased the motivation and English language proficiency of the learners, the same result was drawn in the study of Safiyeh and Farrah [28] which improvement on the learners' English language skills is prominent. Thus, the flipped classroom is effective in augmenting the linguistic competence of language learners in a very good group. This result was supported by the study of Al-Harbi and Alshumaimeri [23] whose result after the employment of the flipped classroom model enhanced the English grammar performances of their learners. In addition, Filipino researchers Cadiao and Tan [26] also shared the same result as the statistical figure of their research showed a significant increase in the English grammar performance of their grade nine learners, the participants of their study.

Moreover, the clustering of the participants is a noble addendum to the body of knowledge as it is identified as the research gap that is filled in this research. To elaborate, the usage of the flipped classroom approach is very effective for the group of learners whose GPA ranges from 1.4-1.9 (very good group) and 2.0-2.5 (good group) with 1.0 being the highest GPA that a student can achieve. However, in the statistical data, it is identified that the good group of students showed more significance compared to the very good group. It shall also be noted that there are more participants identified under the good group in comparison to the number of participants under the very good group. Nevertheless, the result shows no big difference in their probability value.

Hence, this research focused on the syntactic grammar of the English language which Canale and Swain [29] referred to as the mastery of the code of language this research emphasizes the features and rules of the target language such as vocabulary, word formation, and sentence formation. The core topics reviewed in this three-month intervention were the parts of speech, subject-verb agreement rules, clauses, conditionals, verb tenses, modals, short questions, passive and active voice, direct, and indirect speeches, vocabulary, and word formation processes while they demonstrated better scores in topics like pronouns, articles, WH questions, and direct and indirect speeches.

Collectively, the respondents of this study demonstrated weaknesses in different areas such as the proper usage of prepositions, verb tenses, conditionals, relative clauses, subject-verb agreement rules, and verb tenses. This observation suggested that English language teachers who are teaching English as a second language should delve deeper and focus their discussion on the topics that should be the topic to be emphasized using the flipped classroom approach. This approach is adequate and effective for Filipino English language learners. Similar findings were mentioned by Nuon and Champakaew [24] in the previous study [30], [31], where both researchers also observed an increase in the students' English grammar achievement. Likewise, various experiments were conducted utilizing the flipped classroom approach such as the study of Touchton [32], who looked at how flipped learning affected writing. He discovered that students in the flipped version of his course performed better on his final research paper requirement than students who were in the lecture-based class. The students taking English as a foreign language course in Taiwan who are under the flipped course outperformed the students who were taught under the traditional classroom model that is shown in various assessments such as in oral presentations and writing performance which is in agreement with Harvey [33] whose students in a flipped version of his Latin class outperformed those students who are under the traditional model. The respondents of this study found the utilization of video lectures created by the teacher as effective and it is very evident also that the theory of connectivism [34], as a theoretical framework for understanding learning in a digital age where knowledge is distributed across various external networks allowing the learners to interact, collaborate, and learn among themselves is proven very possible using the flipped classroom model.

Flipped classroom model as presented in Figure 1 highlights a very collaborative, engaging, independent learning yet well-facilitated by the teacher type of teaching and learning process. The concept of using it in the classroom should not be doubted as it is found to be effective not only in this research but in any other published research studies. The learners here have autonomy in their learning as they were seen to study by watching video lectures, reading supplementary materials, and answering worksheets or thought-provoking questions before they attended the session. The learners had ample schema of the topics as they would be exposed to engaging and collaborative activities during the sessions. This type of approach is highly effective and appreciated by the learners who participated in this research. Similarly, Ngo and Yunus [35] found it to be effective in language teaching and learning practice. In addition, the researchers asked the participants randomly if they would be willing to attend a class that used the flipped classroom approach again in the future and all of the answers of those respondents randomly asked was a yes. They further shared that this approach provided them opportunity to learn with their peers and to share their ideas without becoming anxious.

In the educational management context, the results presented in the findings of this study implied that the learners' English language proficiency shall be given attention, especially with the alarming problems and results in the proficiency tests published. This study provided inputs that the conventional way of honing the learners in terms of their linguistic skills shall be changed and technology integration is paramount. Since the institutions are now dealing with the type of learners who are accustomed to using technology, technology must be used in the teaching and learning process. With this, teachers especially those who are handling English language and literature classes shall include teaching strategies in their syllabuses, the utilization of a noble approach such as this flipped classroom approach as it is proven effective in this research. Likewise, such technology integration shall lead to the creation of a specific policy where every faculty member shall be able to attend and be trained in professional development seminars/trainings focusing on various technology integration in teaching and how they can use them in their respective classes. On the other hand, the management shall also invest in SMART classrooms to allow a smooth implementation of technology-integrated instructions.

4. CONCLUSION

In the flipped classroom approach, students are seen to be working using technology, collaborating with their peers before and during class sessions, and being exposed to various activities. After the employment of a flipped classroom approach in a language class, it is concluded that this approach enhances the linguistic competence of Filipino language learners in both groups (good and very good) who are studying the English language. This truly supports the formulated assumption which is flipped classroom approach augments the linguistic competence of Filipino language learners.

The result of this research benefits the language and literature teachers to consider the utilization of technology-integrated approaches in their teaching. Also, it provides pieces of evidence to school administrations that technology is paramount in the teaching and learning process thus, an upgrade of equipment and facilities is necessary to ensure the delivery of quality and effective instruction to Filipino learners. It is then recommended that the employment of a flipped classroom approach be considered by

other English language teachers who observe decline in the English proficiency level of their learners. Also, it is further recommended that policies on the creation of SMART classrooms be crafted and implemented by school administrators to provide holistic support to the teachers in the employment of technology-integrated approaches in their classes.

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