A flipped classroom-based program to develop the Egyptian EFL sophomores' achievement in morphological affixes

Assoc. Prof. Dr. Marghany Mahmoud Marghany
Head
Dept., of Languages and Translation
Higher Institute for Specific Studies, Haram

Abstract

The current study examined the effectiveness of using flipped-classroom based program in teaching morphological affixes to Egyptian EFL learners. In other words, the present study investigated the improvement of Egyptian EFL students' performance in using FL morphological affixes. One hundred second-year English-majoring students participated in the present study. They were divided into a control group and an experimental group. Fifty participants were assigned to each group. The experimental group participants were taught the FL morphological affixes by using the flipped-classroom program, while their control group counterparts were taught the FL morphological affixes by using a conventional method. Data were collected through the means of a pretest and a posttest. For the purpose of quantitative data analysis, the Paired Samples T-Test and the Independent Samples T-Test were employed. As for qualitative data analysis, the performance of each examined group in using FL morphological affixes was described twice in the pretest and the posttest to determine their trouble spots. Findings indicated better improvement in the experimental group's performance in comparison to that of the control group. The present study drew implications for teaching morphological affixes in the Egyptian EFL context on the basis of the flipped classrooms.

Keywords: Effectiveness of flipped classroom-based program, morphological affixes, Egyptian EFL sophomores, FL instruction

برنامج قائم على الفصول الدراسية المعكوسة لتطوير تحصيل طلاب الفرقة الجامعية الثانية للطلاب المصريين الدارسين للغة الإنجليزية كلغة أجنبية للواحق الصرفية

أستاذ مشارك د/ مرغنى محمود مرغنى
رئيس قسم اللغات و الترجمة
المعهد العالى للدراسات النوعية- الهرم

الملخص
قامت الدراسة الحالية بإختبار فاعلية استخدام برنامج قائم على الفصول المعكوسة لتدريس اللواحق الصرفية للطلاب المصريين الدارسيين للغة الإنجليزية كلغة أجنبية، و بعبارة أخرى قامت الدراسة الحالية بتقييم التحسن فى أداء الطلاب المصريين الدارسين للغة الإنجليزية كلغة أجنبية فى إستخدام اللواحق الصرفية فى اللغة الأجنبية حيث شارك فى الدراسة الحالية مائة طالب متخصص فى اللغة الإنجليزية بالفرقة الجامعية الثانية، و تم تقسيمهم إلى مجموعتين: المجموعة الضابطة و المجموعة التجريبية بمعدل خمسون مشاركا لكل مجموعة، و تم تدريس اللواحق الصرفية فى اللغة الأجنبية لطلاب المجموعة التجريبية بإستخدام برنامج قائم على الفصول الدراسية المعكوسة بينما تم تدريسها لنظرائهم فى المجموعة الضابطة بالطريقة التقليدية، و تم تجميع البيانات البحثية بإستخدام كل من الأختبار القبلى و الأختبار البعدى، و لغرض التحليل الكمى للبيانات البحثية تم إستخدام كل من أختبار- ت للعينات المقترنة و أختبار- ت للعينات المستقلة، و لغرض التحليل الكيفى للبيانات البحثية تم مرتين وصف أداء كل مجموعة من المجموعتين المختبرتين فى إستخدام اللواحق الصرفية فى اللغة الإنجليزية فى الأختبارين القبلى و البعدى من أجل تحديد الصعوبات التى تواجههم فى هذا الشأن، و أشارت النتائج إلى التحسن الأفضل فى أداء المجموعة التجريبية مقارنة بإداء المجموعة الضابطة، و قدمت الدراسة مضامين لتدريس اللواحق الصرفية فى السياق المصرى لتدريس اللغة الإنجليزية كلغة أجنبية على أسس إستخدام الفصول الدراسية المعكوسة.

الكلمات المفتاحية:
فاعلية برنامج قائم على الفصول المعكوسة، اللواحق الصرفية، الطلاب المصريين بالفرقة الجامعية الثانية الدارسين للغة الإنجليزية كلغة أجنبية، تدريس اللغة الأجنبية

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Introduction

Ping, Verezub, Badiozaman and Chen, (2019) and Dalbani, Eissa, Syed-Ahmad, and Almusharraf (2022) clarified that nowadays the regular instruction is no longer adequate to fulfill the requirements of teaching and learning amid the wide accessibility of the internet-based technology. These conventional methods fall short of providing unlimited learning environment which is not restricted to specific time and materials. As such, the conventional teaching methods do not meet the teaching and learning strategies of both teachers and learners. According to Haghighi, Jafarigohar, Khoshsima, and Vahdany (2018) and Ngo and Yunus (2021), this dilemma of conventional teaching methods is viewed as the catalyst for finding out adequate effective new teaching methods that satisfy the teaching and learning needs of both teachers and learners. In the realm of FL teaching and learning, language instructors and learners are always in dire needs for using up-to-date technology which serves the objectives of TEFL process. This is particularly important because Egyptian EFL learners are no longer passive recipients of knowledge, a matter which was obviously apparent during the COVID-19 pandemic, but rather active participants who can add learning inputs due to the use of advanced technology.

In this regard, Abu Safiyeh and Farrah (2020) and Aydin and Demirer (2022) clarified that the flipped learning has emerged as a model of blended learning particularly during the COVID-19 pandemic. The flipped learning can be traced to Bergmann and Sams in the early 21st century. It is based on flipping or reversing the classroom explanation into recorded videos which are usually introduced to FL learners in prior to the actual classes. Meanwhile, the classes are devoted to do learning activities, tasks and exercises related to the theoretical content of the recorded videos. In other words, Asad, Ali, Churi, and Moreno-Guerrero (2022) pointed out that the flipped learning innovation is based on changing the course order where the course instruction is moved out of the classroom learning environment. Thus, students are required to study and review the course learning materials at home by using technology-

based instruction in order to save the class time for performing activities, tasks and exercises.

In addition, Han (2022) explained the benefits and challenges resulting from the use of flipped classrooms in FL learning. As for the benefits, Hans indicated that flipped classrooms provide collaborative teaching and learning atmosphere, improve learning of language skills, save classroom time for doing activities and exercises. Thus, students can have opportunities for practicing the knowledge which they have acquired over the course being taught. During these activities, the instructors can provide guidance to students, explain some difficult points, and correct students' mistakes. Hans also clarified that the central challenge encountered FL learners in the flipped classrooms is related to their unfamiliarity with using the integrated technology into the traditional classes. Language instructors also may have heavy load in selecting online materials that suit the purpose of learning

The literature reveals contradictory results on the effectiveness of using flipped classrooms in comparison with traditional methods for the purpose of developing FL learners' performance. Studies of Ford, Burns, Mitch, and Gomez (2012), Brown (2015), Smith (2015), and Mori, Omori, and Sato (2016) indicated that flipped classrooms did not significantly affect the examined learners' FL performance as compared to traditional methods. On the other hand, studies of Ahmed (2016), Qadar and Arslan (2019), Abu Safiyeh and Farrah (2020) and Nourinezhad, Hadipourfard, and Bavali (2022) indicated the effectiveness of using flipped classrooms in improving the EEL language skills.

Furthermore, Hans (2022, P. 4) stated that although several studies were conducted on the flipped classrooms over the last ten years, there are other aspects of language learning which are not adequately examined. One of these aspects is the little knowledge of language instructors on the relation between flipped classrooms, in terms of using social networks, and their learners' achievement. In addition, Ahmed (2016) called for further research on the effect of the flipped learning on the *self-directed* learning in the Egyptian EFL context. Moreover, several studies handled the flipped learning effect on developing the four language skills whether collectively or individually. Other flipped learning-based studies focused on the perception, beliefs and attitudes of FL learners towards the use of that technological tool. Thus, there is a need to verify the effectiveness of flipped classrooms on the instruction of a specific academic course. As such, the topic of FL morphological affixes was

selected to be handled in light of the flipped learning approach. The mastery of FL morphological affixes is of particular importance because it reinforces the FL learners' proficiency in other skills like reading comprehension, writing, speaking, listening and translation as well. Therefore, the present study fills this literature gap by examining the flipped classrooms impact on developing the Egyptian EFL learners' performance in comprehending FL morphological affixes.

Statement of the problem

Based on the researcher's observation, which spanned more than two decades, of the Egyptian EFL students' ability to use morphological affixes, there is a lack of appropriate use of the FL morphological affixes. As FL morphology is a newly introduced academic course to second-year students, the current study examined the effectiveness of using flipped-classroom based program in teaching morphological affixes to Egyptian EFL learners. In other words, the present study assessed the improvement of Egyptian EFL students' performance in using FL morphological affixes.

Hypotheses

The current study attempted to verify four null hypotheses. First, there is no difference in using FL morphological affixes among all participants of the two examined groups in the pretest. Second, participants of the control and experiment groups do not differ in using FL morphological affixes in the posttest. Third, there is no statistically significant difference in the achievements of both groups in the posttest. Fourth, the flipped classroom-based program does not effectively develop the experimental group's achievement in using FL morphological affixed compared to the control group counterparts.

Questions

The present study attempted to answer the following questions:

1. **What is the achievement of the control and experimental groups' participants in the pretest of morphological affixes?**
2. **How do the participants of both groups perform in using the morphological affixes in the posttest?**
3. **In terms of statistics, are there significant differences between the achievements of both groups in using the morphological affixes?**
4. **What is the effect of a flipped classroom-based program on developing the achievement of Egyptian EFL learners in using the morphological affixes?**

Aims

The main aim of the present study is to develop Egyptian students' achievement in FL morphological affixes by using the flipped classrooms. The current study also aimed to determine:

1. **The two examined groups' achievements in using the morphological affixes in the pretest.**
2. **The achievements of both examined groups in using the morphological affixes in the posttest.**
3. **The statistical significant differences in the achievements of both examined groups in using the morphological affixes.**
4. **The effectiveness of flipped-classroom based program in developing the two examined groups' achievements in using the morphological affixes.**

Significance of the study

There are various reasons behind the significance of the present study. These reasons are as follows:

- **First, the current study comes in accordance with the general policy of the Ministry of Higher Education to improve FL performance among Egyptian EFL learners at higher learning institutes.**
- **Second, the current study is compatible with the goals of the Department of Languages and Translation, Higher Institute for Specific Studies, Giza to devise new teaching methods that can generally help to improve the students' FL proficiency and particularly develop their achievement in the English courses being taught.**
- **Third, the present study also contributes towards the enrichment of FL literature in the field of word structure and morphological affixes. In other words, the effect of using the flipped learning has been examined in relation to listening, speaking, reading and writing in other studies. However to the researcher's knowledge, the investigation of the flipped learning's effect on developing the morphological affixes in the Egyptian EFL context is a novel area.**
- **Fourth, the present study is also significant since it has implications to the development of FL curricula and to the process of FL teaching in the Egyptian EFL context.**

- **Fifth, the present study is a chain in the researcher's efforts to highlight the importance of technology incorporation into FL teaching in the Egyptian EFL context since 2017.**
- **Sixth, significance of the present study is also related to the verification of the effectiveness of flipped classrooms in improving FL learners' achievement.**

Delimitations

The present study is mainly delimited to the development of teaching FL morphological affixes to second year English-majoring students at the Higher Institute for Specific Studies, Giza. It is hoped that the present study's findings can be useful for other Departments of English at other Higher learning institutes as well. The current study was conducted in the first term of the academic year 2022-2023.

Literature review

El-Sawy (2018) examined the perception of 49 English-majoring Saudi EFL students in Al-Jouf University of flipped learning by using the blackboard system in FL classes. Data were collected by a four-point Likert scale 31-item questionnaire. The questionnaire was divided into six sections covering the participants' willingness to use flipped learning, reasons behind their choice to take part in flipped learning-based tasks, and their views on using blackboard system in such tasks. The questionnaire also covered the participants' involvement in using the blackboard system in the flipped learning tasks, their perception of the benefits of using the blackboard system in the flipped learning-based tasks and their assessment of experiencing the use of blackboard system in performing the flipped learning-based tasks. Thus, the present study essentially differed from that of El-Sawy which mainly focused on the learners' psychological factors that affected the use of flipped classrooms in the FL learning process. Meanwhile, the present study is experimental in nature which focused on the teaching and learning of FL morphological affixes in the Egyptian EFL context. Due to these differences, the present study adopted different instruments of data elicitation from those adopted by El-Sawy (2018). El-Sawy found that the majority of Saudi EFL students expressed their recognition of the usefulness of using the blackboard system as a tool of flipped learning in FL learning. Most participants realized that their FL skills could be improved due to the flipped learning that gave them more opportunities of practicing English, and saved the class time for doing exercises and assignments. Most participants were also willing to use the blackboard

system in spite of the challenges which they encountered in using the blackboard system. These challenges were mostly technical which required further technical training for using the blackboard system.

Qader and Arslan (2019) explored the effect of using the flipped learning on developing the performance of 66 Iraqi English-majoring students at Salahaddin University in FL writing. Data elicitation relied on three instruments. First, participants took a pretest and a posttest of FL writing. Second, participants were asked to respond to a questionnaire on their attitudes towards the utilization of flipped learning. Third, only ten of the experiment group participants were interviewed. Both quantitative and qualitative analyses of data were conducted. Findings showed better improvement of the experimental group's performance in FL writing pretest and posttest compared to that of the control group. Most of the experimental group participants believed that the flipped learning made them well-prepared in prior to the FL writing classes. Videos helped them acquire different patterns of sentence structure. Due to watching videos, they became more confident in raising questions for the purpose of seeking the instructor's clarification. It became also easier due to the flipped learning to write the 200-word paragraph. The flipped learning also improved their learning strategies of FL writing. On the other hand, a few number of experimental group's participants preferred conventional instruction for learning FL writing because they could seek the instructor's guidance. They revealed that flipped learning did not help them at all to improve their FL writing performance.

Abu Safiyeh and Farrah (2020) examined the impact of employing the flipped classrooms on the enhancement of FL skills of the Palestinian EFL secondary school female students. Abu Safiyeh and Farrah divided the participants into a control group and an experimental group where the latter was taught the English language syllabus by utilizing the flipped classrooms. Both groups were pretested and post-tested. In this concern, an English language proficiency test was devised covering various language skills. The test covered all language skills and vocabulary and grammar as well. In this regard, the researcher is of an opinion that it would be better to utilize the flipped learning to develop a specific language skill under which other sub-skills can be implicitly reinforced such as the study of Ahmed (2016) instead of covering all skills in one trial like the study of Abu Safiyeh and Farrah (2020). Data were also collected through the use of a semi-structured interview with the FL teacher who was in charge of teaching the FL syllabus at that secondary school. The semi-structured interview questions revolved around the

teacher's preference of using a conventional method or the flipped learning, beliefs about the advantages and disadvantages of the flipped learning and the language skill which the flipped learning can develop the most. As for the findings, Safiyeh and Farrah reported that flipped learning was effective in developing the experimental group's achievement in the four language skills and vocabulary and grammar compared to the control group's FL achievement.

Ivanytska, Dovhan, Tymoshchuk, Osaulchyk, Havryliuk (2021) attempted to verify the hypothesis that flipped learning is an efficient teaching method for the purpose of English language instruction to English-majoring students in Kyive University, Ukraine. The participants comprised 48 students and 23 English language instructors. The data elicitation relied on a Likert-scale questionnaire and an interview. The questionnaire sought the 48 students' responses to 15 questions revolved around the flipped learning effectiveness. The five responses were: *very ineffective=1, somewhat ineffective=2, neither effective nor ineffective=3, somewhat effective=4, and very adequate=5*. As for the interview, the language instructors were questioned about their familiarity with using the flipped learning; whether they know, do not know, or heard about the flipped learning. The findings indicated that most participants were positively satisfied with the implementation of flipped learning in teaching English. The participants' satisfaction was attributed to the advantages of applying the flipped learning method. According to the participants' viewpoints, the flipped learning sustains the learning environment improvement, collaboration among peers, student-instructor interaction, development of sell-directed learning, instructors' feedback, and participants' performance.

Sengul and Bostanci (2021) investigated the attitude of 30 pre-service teachers enrolled at the Department of English Language Teaching in a private University located in North Cyprus towards two models of the flipped learning, namely *in-class* and *out-of-class*. These two models of flipped learning were applied to an academic course of FL writing. The quantitative data were collected by using two different five-point Likert scale questionnaires administered to two groups of participants: group A and group B. Whereas one questionnaire aimed to measure the participants' attitudes and preferences of *in-class* flipped learning, the other questionnaire aimed to collect data on the participants' attitudes and preferences towards *out-of-class* flipped learning. Findings indicated that even though the participants positively viewed both types of the flipped learning, they preferred producing FL writing in *out-of-class* flipped learning model. Sengul and Bostanci explained that the

main advantage of *in-class* flipped learning according to the participants' viewpoints is seeking their instructor's assistance while the main advantage of *out-of-class* flipped learning is to seek knowledge from various accessible online sources.

Nourinezhad, Hadipourfard, and Bavali (2022) discussed the impact of flipped learning on enhancing the writing efficacy and achievement of fifty Iranian medical students in Shiraz University of medical sciences who studied English as an ESP course. The participants were divided into a control group and an experimental group with 25 participants each. A traditional method was applied to writing instruction for the control group, whereas flipped instruction was applied to the experimental group. Data were collected through the instruments of a pretest, a posttest and a five-point Likert-scale questionnaire. The questionnaire consists of 25 items on the participants' beliefs about the flipped instruction influence on self-efficacy and FL writing performance. Nourinezhad, et al. (2022) found that flipped instruction has positive impact on improving the writing efficacy and achievement of the experimental group participants in comparison to those of the control group participants.

Method

The present study adopted a mixed method of quantitative and qualitative data analysis (Seiffedin and El-Sakka, 2017, **Cohen, Manion and Morrison, 2018,** Secolsky and Denison, 2018, Qadar and Arslan, 2019, Brookhart and McMillan, 2020**).** The quantitative analysis of data relied on the Paired Samples T-Test and the independent Samples T-Test. In this regard, the descriptive statistics of the elicited data in the pretest and the posttest is introduced. The existence of statistical significant differences in the pre- and posttests' performances of both groups was also verified. Meanwhile, the qualitative analysis of data handles the performance of both groups of participants in the pretest and the posttest as well.

Participants

One hundred English-majoring sophomores at the Higher Institute for Specific Studies, Haram participated in the current study. They were divided into a control group and an experimental group. Fifty participants were assigned to each group. The experimental group participants were taught the FL morphological affixes by using the flipped-classroom program, while their control group counterparts were taught the FL morphological affixes by using regular instruction. Data were collected during the first term of the academic year 2022-2023.

Procedure

The pretest and the posttest were administered in the beginning and towards the end of the first term of the academic year 2022-2023. Each test lasted for one and a half hours. The participants of both examined groups took the pretest of morphological affixes in the second-week lecture. The first-week lecture was an introductory lecture in which participants got familiar with the basic definitions of FL morphology terms like morphemes, bound and free morphemes, etc. After the pretest, the control group participants were taught FL morphological affixes by using the lecture method. On the other hand, the experimental group participants were taught FL morphological affixes by using the flipped-classroom-based program. The program spanned ten weeks during the first term of the academic year 2022-2023. A list of Youtube videos used in the flipped learning of morphological affixes is introduced under the online references. The FL morphological affixes test was piloted using thirty participants. The pilot study aimed to determine the participants' difficulty in understanding the test questions. As a result, some questions were reformed for the purpose of clarity. The pilot study also aimed to determine the reliability of the FL morphological affixes test. The estimation of Cronbach's alpha coefficient was .91 in an indication of the test's high reliability.

Data collection instruments

The current study relied on the pretest and posttest in eliciting its data (Brown, 2018, Secolsky and Denison, 2018, Lambert, 2019). For this purpose, a morphological affixes test (Appendix A) was developed covering various aspects of the morphological affixes. These aspects include the types of *free* and *bound morphemes* used to construct FL words, the types of *inflectional* and *derivational morphemes*, and the different types of *allomorphs* ending with '-s' and '-ed'. The morphological affixes test consists of 50 multiple choice questions and its total mark is 50 marks.

Data analysis

The Paired Samples T-Test was employed for two purposes. It determined the statistical significant differences in the control group's achievements in the pretest and posttest of FL morphological affixes. Similarly, it determines the statistical significant differences in the experimental groups' achievements in the pretest and posttest of FL morphological affixes. Then, the Independent Samples T-Test was employed to determine the statistical significant difference in the achievements of the control and experimental groups.

Table 1: The Paired Samples T-Test Statistics

T	N	M	Std. deviation	Std. error mean	Minimum	Maximum
Posttest control score	50	24.7482	11.47921	.59853	25	36
Posttest experimental score	50	35.5836	20.76424	.97372	29	47
Pretest control score	50	16.6234	4.16342	.45912	23	28
Pretest experimental score	50	16.6885	4.20133	.37104	24	29

Table 2: The Paired Samples T-Test

Test	M	SD	N	DF	t-value	Sig.
Pretest control score	16.6234	4.20342	50	49	1.962	.066
Posttest control score	24.7482	11.47921				
Pretest experimental score	16.6885	4.16133	50	49	21.573	.000
Posttest experimental score	35.5836	20.76424				

As for the two examined groups' achievements in the pretest, Table 1 indicates that the control group's mean score was 16.62 and its minimum and maximum score ranged between 23-28 marks. Meanwhile, the experimental group's mean score was 16.68 and its minimum and maximum score ranged between 24-29 marks. This is an indication of the poor achievement similarity between the two investigated group's participants in the FL morphological affixes. The slightly higher standard deviation of the control group (4.20) compared to that of the experimental group (4.16) indicates that there was almost the same variance in the two groups' pretest achievements. The finding affirms the null hypothesis that both investigated groups had almost similar achievements in the pretest. In addition, Table 3 shows the total frequency of errors of the former (1226) was higher than that of the latter (1220). Table 3 indicates that the two investigated groups had difficulty in the different aspects of the FL morphological affixes. The identification of bound inflectional

morphemes, bound morphemes, and bound derivational morphemes are the top aspects of the both groups' trouble spots. Furthermore, the two investigated group also had difficulties with allomorphs ending with '-s' and '-ed'. In this regard, Table 4 provides examples of both investigated groups' errors in the FL morphological affixes pretest.

Table 3: Frequency of all participants' errors in the FL morphological affixes pretest

FL Morphological Affixes	No. of Questions	Frequency of control group	Frequency of experimental
Free morphemes	10	225	227
Bound morphemes	10	244	242
Bound inflectional morphemes	10	248	246
Bound derivational morphemes	10	228	227
Allomorphs of ending '-s'	5	136	135
Allomorphs of ending '-ed'	5	145	143
Total frequency of errors		1226	1220

Table 4: Examples of the pretest errors of FL morphological affixes

Questions	Errors	Corrections
The ending '-s' in *cats* is pronounced as …….	/əz/	/s/
The ending '-s' in *searches* is pronounced as …….	/z/	/əz/
The possessive '-s' in *student's* is pronounced as …….	/əz/	/z/
The ending '-s' in *forms* is pronounced as …….	/s/	/z/
The ending '-ed' in *helped* is pronounced as …….	/əd/	/t/
The ending '-ed' in *finished* is pronounced as …….	/d/	/t/
The ending '-ed' in *tripped* is pronounced as …….	/d/	/t/
The ending '-s' in *hotels* is a/an ……. morpheme	Derivational	Inflectional
The ending '-s' in *invites* is a/an ……. morpheme	Derivational	Inflectional
The ending '-s' in *clubs* is a/an ……. morpheme	Derivational	Inflectional
The possessive '-'s' as in *teacher's* is a/an…….. morpheme	Derivational	Inflectional
The past '-ed' as in *created*	Derivational	Inflectional

Questions	Errors	Corrections
is a/an ……. Morpheme		
The ending '-ing' as in *creating* is a/an ……. Morpheme	Derivational	Inflectional
The comparative '-er' as in *higher* is a/an …… morpheme	Derivational	Inflectional
The superlative '-est' as in *the highest* is a/an …… morpheme	Derivational	Inflectional
The '-ion' affix as in *creation* is a/an morpheme	Inflectional	Derivational
The 'pre-' affix as in *predetermined* is a/an ……. morpheme	Inflectional	Derivational
The 'un-' affix as in *unhappy* is a/an ……. morpheme	Inflectional	Derivational
The '-ment' affix as in *achievement* is a/an …..morpheme	Inflectional	Derivational
The '-ness' affix as in *happiness* is a/an …… morpheme	Inflectional	Derivational
The 'im-' affix as in *imbalance* is a/an ……. morpheme	Inflectional	Derivational
The word *dreamy* consists of ……. morphemes	One	Two
The word *happy* consists of …….. morpheme	Three	One
The word *father* consists of …… morphemes	Three	Two
The word *classy* consists of …….. morphemes	Three	Two
The 'un' affix …… stand alone as a word	Can	Cannot
The 'dis' affix …… stand alone as a word	May be	Cannot
The '-ly' affix ….. stand alone as a word	Can	Cannot
The '-ism' affix …… stand alone as a word…..	May be	Cannot
The 'dom' affix ….. stand alone as a word	May be	Cannot

The program fulfills its main aim to develop the Egyptian EFL students' achievement in using FL morphological affixes. It also realizes its objectives to make students able to:

- **Understand the internal structure of English words.**
- **Be familiar with the different processes of word formation in English.**
- **Be familiar with different types of FL morphemes: free and bound.**
- **Be able to distinguish between bound derivational and inflectional morphemes.**
- **Understand the morphological functions of allomorphs.**
- **Be able to structurally analyze the English words.**

Furthermore, the program adopts the flipped-classroom approach. That is, the students had the learning materials of FL morphological affixes in prior and the face-to-face lectures were devoted to answer students' questions, and doing activities and exercises. The flipped-classroom program is successfully fruitful in realizing it aim and objective as it is indicated in the section below.

Table 5: Content of the flipped-classroom based program

- **Chapter One: Introduction to English Morphology**
- **Chapter Two: Morphemes**
- **Chapter Three: Free and Bound Morphemes**
- **Chapter Four: Inflectional and Derivational Morphemes**
- **Chapter Five: Immediate Constituent Analysis of English word structure**
- **Chapter Six: Allomorphs**
- **Glossary**

As for the posttest results, the experimental group highly outperformed the control group in the FL morphological affixes posttest. This is evident as the experimental group had higher mean score (35.58) compared to that of the control group (24.74). The former also had higher minimum and maximum scores (29-47) compared to the latter (25-36). The former had higher standard deviation (20.76) compared to the latter (11.47) as well. That is, there was more variance in the experimental group's achievement in the posttest of FL morphological affixes. The control group's achievements in the pretest and posttest revealed no statistical significant difference as the p value was > 0.05. Meanwhile, the experimental group's achievements in the pretest and posttest revealed statistically significant difference as the p value was < 0.05. The finding

rejects the null hypothesis that there is no difference in both investigated groups' achievements in the FL morphological affixes posttest.

In addition, Table 6 shows the results of the Independent Samples T-Test. Table 5 indicates that the experimental group's participants had higher gained mean score (18.89) compared to the control group (8.12). Their standard deviation (16.60) is higher than that of the control group (7.27). This indicates that there was more variance in the achievement of the experimental group in comparison with the control group. Table 6 also clarifies that the experimental group's posttest achievement was statistically significant compared to that of the control group as the p value was < 0.05. The finding rejects the null hypothesis that there is no statistically significant difference between both investigated groups' achievement in the posttest. The finding is compatible with those reported by Ahmed (2016), Qadar and Arslan (2019), Abu Safiyeh and Farrah (2020) and Nourinezhad, Hadipourfard, and Bavali (2022). Furthermore, the experimental group had fewer errors in FL morphological affixes compared to the control group. The total frequency of errors made by the experimental group's participants was (692) compared to (1010) for the control group (Table 7). That is, the experimental group's participants developed their achievements in all items of the posttest. This includes the types of free and bound morphemes, the types of bound morphemes: inflectional and derivational and the different ways of pronouncing allomorphs. The finding indicates that the flipped-classroom based instruction was more effective compared to the traditional instruction in teaching FL morphological affixes in the Egyptian EFL context. That is, the finding rejects the fourth null hypothesis of the present study. The finding is similar to those reported **by** El-Sawy (2018), Ivanytska, et al. (2021), Sengul and Bostanci (2021) and Hans (2022). Meanwhile, the finding is in contrast with those reported by Ford, et al. (2012), Brown (2015), Smith (2015), and Mori, Omori, and Sato (2016).

Table 6: The Independent Samples T-Test

	N	M Gain Score	SD	DF	t-value	Sig.
Control	**50**	**8.12**	**7.27**	**49**	**19.61**	**0.000**
Experimental	**50**	**18.89**	**16.60**	**49**		

Table 7: Frequency of all participants' errors in the FL morphological affixes posttest

FL Morphological Affixes	No. of Questions	Frequency of control group	Frequency of experimental
Free morphemes	10	200	150
Bound morphemes	10	215	164
Bound inflectional morphemes	10	208	140
Bound derivational morphemes	10	198	135
Allomorphs of ending '-s'	5	96	56
Allomorphs of ending '-ed'	5	93	47
Total frequency of errors		1010	692

Discussion, conclusion and FL implications

The present study concluded that both control and experimental groups had almost similar achievement in using FL morphological affixes in the pretest. Their trouble spots covered various items morphological affixes. The finding accepts the null hypothesis that there is no difference in the achievement of the two investigated groups in the pretest. However, the experimental group's participants highly outperformed their control group counterparts in the posttest. In this regard, the total frequency of errors made by the experimental group's participants was fewer than that of control group. The finding rejects the null hypothesis that there is no difference in the achievement of both examined groups in the posttest. The finding is compatible with those reported by Ahmed (2016), Qadar and Arslan (2019), Abu Safiyeh and Farrah (2020) and Nourinezhad, Hadipourfard, and Bavali (2022).

Furthermore, there is a statistically significant difference in the achievements of both groups in the FL morphological affixes posttest. The finding is similar to those reported by Amed (2016) and El-Sawy (2018). Thus, the finding rejects the null hypothesis that both groups did not statistically significantly differ in their achievements in using FL morphological affixes in the posttest. Therefore, the present study found the utility of flipped learning as an effective approach in developing the achievement of experimental group's participants in FL morphological affixes compared to the conventional method. Thus, the present study rejects the null hypothesis that the flipped classroom-based program did not positively affect the experiment group's achievement in FL morphological affixes. The finding is compatible with those reported by El-Sawy (2018), Ivanytska, et al. (2021), Sengul and Bostanci (2021) and Hans (2022). On the other hand, the finding contradicts those

reported by Ford, et al. (2012), Brown (2015), Smith (2015), and Mori, Omori, and Sato (2016).

The present study found that flipped-classroom motivated the experimental group participants to actively take part the process of teaching and learning FL morphological affixes. The experimental group participants not only reviewed the assigned recorded Youtube videos, but also shared other videos among themselves for FL morphological instruction. This was evident during the class time as they showed some of these videos and raised questions about the classification of inflectional and derivational morphemes. They also enriched the face-to-face classes with various examples of the free and bound morphemes and different pronunciations of FL allomorphs. The experimental group participants also affirmed the usefulness of using the flipped learning in studying FL morphological affixes. They were able to watch the videos for several times at their convenient times. They controlled operating the videos in the sense making pauses or replaying them to make sure of certain points. They said watching videos is more useful than reading out of print materials.

For them, videos are easy references which are accessible for future learning. Watching videos can compensate for their absence from the face-to-face classes. Watching videos also enabled them to take notes of the difficult points which they need to review with the course instructor. Almost none of them complained about the technical inability to operate or use these videos. Therefore, the flipped learning utility in teaching morphological affixes can be applied to other courses of English being taught at the Higher Institute for Specific Studies, Haram and any other higher learning institutes that may find it useful for developing their students' language skills. Thus, the flipped learning can also be useful for FL curriculum planners who should take into consideration nominating different online videos that can help enhance the specific language skills being taught. This nomination can guide language instructors and students to maximize their benefit of these videos for the purposes of FL teaching and learning.

Recommendation for further research

The present study recommended the following studies for further research on the flipped classrooms:

1. The current study can be replicable in the Egyptian EFL context by examining the effect of flipped classrooms on developing

performance in other language skills such as listening, speaking, reading, and writing.

2. A similar study can be conducted using different samples of participants at other educational stages in the Egyptian EFL context.
3. A study can examine the Egyptian FL instructors' perception and beliefs about using the flipped classrooms to improve language proficiency of Egyptian EFL learners.
4. A study may measure the impact of using flipped learning on the Egyptian EFL learners' motivation and attitudes towards learning English.
5. A study may examine the effect of utilizing the flipped learning on the learning styles and strategies of Egyptian EFL learners while learning English.
6. Another suggested study may handle the flipped learning's effect on the Egyptian FL teachers and instructors' teaching strategies.

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Appendix A: FL Morphological Affixes Test

Total: 50 Marks

Choose the correct answer: a, b, or c:

1. The ending '-s' in *cats* is pronounced as …….
a. /s/ b./z/ c. /əz/

2. The ending '-s' in *searches* is pronounced as …….
a. /s/ b./z/ c. /əz/

3. The possessive '-s' in *student's* is pronounced as …….
a. /s/ b./z/ c. /əz/

4. The ending '-s' in *forms* is pronounced as …….
a. /s/ b./z/ c. /əz/

5. The ending '-ed' in *finished* is pronounced as …….
a. /d/ b. /t/ c. /əd/

6. The ending '-ed' in *helped* is pronounced as ……
a. /d/ b. /t/ c. /əd/

7. The ending '-ed' in *tripped* is pronounced as …….
a. /d/ b. /t/ c. /əd/

8. The ending '-s' in *hotels* is a/an ……. morpheme
a. Derivational b. inflectional c. neither a nor b

9. The ending '-s' in *invites* is a/an ……. morpheme
a. Derivational b. inflectional c. neither a nor b

10. The ending '-s' in *clubs* is a/an ……. morpheme
a. Derivational b. inflectional c. neither a nor b

11. The possessive '-'s' as in *teacher's* is a/an…….. morpheme
a. Derivational b. inflectional c. neither a nor b

12. The past '-ed' as in *created* is a/an ……. Morpheme
a. Derivational b. inflectional c. neither a nor b

13. The ending '-ing' as in *creating* is a/an ……. Morpheme
a. Derivational b. inflectional c. neither a nor b

14. The comparative '-er' as in *higher* is a/an …… morpheme
a. Derivational b. inflectional c. neither a nor b

15. The superlative '-est' as in *the highest* is a/an …… morpheme
a. Derivational b. inflectional c. neither a nor b

16. The '-ion' affix as in *creation* is a/an …… morpheme
a. Derivational b. inflectional c. neither a nor b

17. The '-ive' affix as in creative is a/an …….. morpheme
a. Derivational b. inflectional c. neither a nor b

18. The 'pre-' affix as in *predetermined* is a/an ……. morpheme
a. Derivational b. inflectional c. neither a nor b

19. The ‘un-‘ affix as in *unhappy* is a/an ……. morpheme
a. Derivational b. inflectional c. neither a nor b
20. The ‘-ment’ affix as in *achievement* is a/an …..morpheme
a. Derivational b. inflectional c. neither a nor b
21. The ‘-ness’ affix as in *happiness* is a/an …… morpheme
a. Derivational b. inflectional c. neither a nor b
22. The ‘-im’ affix as in *imbalance* is a/an ……. morpheme
a. Derivational b. inflectional c. neither a nor b
23. The ‘-er’ affix as in *teacher* is a/an …… morpheme
a. Derivational b. inflectional c. neither a nor b
24. The ‘-or’ affix as in *actor* is a/an …… morpheme
a. Derivational b. inflectional c. neither a nor b
25. The second morpheme of the word *boldest* is a/an …… morpheme
a. Derivational b. inflectional c. neither a nor b
26. The word *dreamy* consists of ……. morphemes
a. One b. two c. three
27. The word *happy* consists of …….. morpheme
a. One b. two c. three
28. The word *submarine* consists of …….. morphemes
a. One b. two c. three
29. The word *father* consists of …… morphemes
a. One b. two c. three
30. The word *classy* consists of …….. morphemes
a. One b. two c. three
31. The word *airplanes* consists of ……. Morphemes
a. One b. two c. three
32. The word *permission* consists of …….. morphemes
a. One b. two c. three
33. The word *transmit* consists of …… morphemes
a. One b. two c. three
34. The word drummer consists of …….. morphemes
a. One b. two c. three
35. The word *commission* consists of ……. morphemes
a. One b. two c. three
36. The word *committed* consists of …….. morphemes
a. One b. two c. three
37. The word *blog* is a/an …….. class morpheme
Closed b. open c. neither a nor
38. The word *quark* is a/an …… class morpheme.
a. Closed b. open c. neither a nor b

39. The modal verb *do* is a/an …… class morpheme
a. Closed b. open c. neither a nor
40. The modal verb *have* is a/an ……. class morpheme
Closed b. open c. neither a nor
41. The 'un' affix …… stand alone as a word
a. Cannot b. can c. may be
42. The 'dis' affix …… stand alone as a word
a. Cannot b. can c. may be
43. The '-ly' affix ….. stand alone as a word
a. Cannot b. can c. may be
44. The '-ing' affix ……. stand alone as a word
a. Cannot b. can c. may be
45. The '-ism' affix …… stand alone as a word
a. Cannot b. can c. may be
46. The 'dom' affix ….. stand alone as a word
a. Cannot b. can c. may be
47. The morpheme *boy* …….. stand alone as a word
a. Cannot b. can c. may be
48. The morpheme *post* …….. stand alone as a word
a. Cannot b. can c. may be
49. The morpheme 'ible' …….. stand alone as a word
a. Cannot b. can c. may be
50. The morpheme 'ation'…….. stand alone as a word
a. Cannot b. can c. may be