

**The effect of *Twitter*-based program in light of collaborative learning on enhancing the secondary school students' achievement in English grammar**

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### **Abstract**

The present study examined the effect of using *Twitter*-based program in light of collaborative learning to improve the secondary school students' performance in English grammar. Data were elicited by using pre and posttest. Two English secondary school classes took part in the present study. The sixty participants were divided into a control group and an experimental group with thirty participants each. Data analysis was based on the Paired Samples T-Test to determine the differences between the control and experimental groups' performance in the pre-test. The Independent Samples T-Test was conducted to determine the differences between the two examined groups' performance in the English grammar posttest. The present study confirmed that the *Twitter*-based FL grammar instructions are indispensable for improving the secondary school students' performance in English grammar.

**Keywords:** secondary school students, FL grammar instruction, FL performance in English grammar, *Twitter*-based program, collaborative learning

## تأثير برنامج قائم على التويتير في تحسين تحصيل طلاب المدارس الثانوية

### لقواعد اللغة الإنجليزية

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مدرس المناهج وطرق التدريس  
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#### المخلص

تناولت الدراسة الحالية تأثير استخدام برنامج قائم على التويتير في ضوء التعلم التعاوني على تحسين أداء طلاب المدارس الثانوية في قواعد اللغة الإنجليزية، و تم تجميع البيانات البحثية من خلال الأختبار القبلي والأختبار البعدي، و شارك في الدراسة طلاب فصلين من فصول المدارس الثانوية ، و تم تقسيم الستين مشاركا إلى مجموعة ضابطة و أخرى تجريبية بواقع ثلاثون طالبا في كل مجموعة ، و قام التحليل على استخدام أختبار ت للعينات المقترنة لتحديد الفروق بين أداء المجموعتين في الأختبار القبلي، بالإضافة إلى استخدام أختبار ت للعينات المستقلة لتحديد أداء المجموعتين في الأختبار البعدي، و أكدت الدراسة على أن تدريس قواعد اللغة الإنجليزية باستخدام برنامج قائم على التويتير كان فعالا في تحسين أداء طلاب المدارس الثانوية في قواعد اللغة الإنجليزية.

**الكلمات المفتاحية:** طلاب المدارس الثانوية- تدريس قواعد اللغة الأجنبية- الأداء في قواعد اللغة الأجنبية- البرنامج القائم على تويتير- التعلم التعاوني

## Introduction

Erkulova (2020) and Oxford (2017) highlighted the important role of grammar in FL teaching and learning process. Grammar is the main basis of communication. It includes the ability of FL learners to construct, pronounce and comprehend sentences. Pawlak (2012) and (2013) asserted that knowledge of grammar is interrelated to various aspects of phonological, morphological and syntactic knowledge of FL learners. The mastery of grammar enables FL learners to develop their communication and speaking skills. Thus, FL learners are required to develop their grammatical competence to attain FL effective communication. Grammar greatly contributes to the process of FL learning. Learning FL grammar contributes to the efficient construction of FL knowledge. It also sustains FL learners' ability to use English effectively and efficiently. Griffiths and Oxford (2014) and Myhill (2021) emphasized the functionality-based approach of teaching grammar. Grammar should be taught in a way that allows students to comprehend the relationship between their grammatical choices and meaning. As such, students will be able to make linguistic choices that will develop their writing skills. In addition, Ghannam (2019) highlighted the fact that in spite of grammar learning importance, its research comes secondary to other language skills. Ghannam explained that the investigation into strategies of FL grammar learning is still at its early stage in an indication of the negligence of looking into the strategies of FL grammar learning. Thus, there is a need to conduct various studies to account for EL learners' strategies in learning grammar. The present study attempted in one way to analyze the effectiveness of using *Twitter* as an instrument for teaching and learning FL grammar in the Egyptian secondary schools.

Taimalu and Luik (2019) and Gnams (2021) clarified that technology has become an insisting requirement for today's teaching and learning process. At the digital age, the widespread technology entails that FL teachers should be innovative in providing instruction. Technology-based FL instruction has multiple benefits; it improves the teaching quality, helps students to be more motived in learning, and enables students to develop the language skills by accessing different sources of knowledge and information. The use of technology for pedagogical purposes assumes that FL teachers should be knowledgeable of using technology for instruction and assessment purposes as it was evident a few years ago during the COIVD-19 crisis. According to Xu, Yuan, and Liu (2021), it has been recently proven that technology-based instruction can satisfy students' needs and improve their educational learning and achievement. In other words, technology can help FL learners to overcome difficulties of learning which they encounter in learning various language skills. Undoubtedly, one of such main difficulties is learning FL grammar particularly at the secondary-school level.

Although technology is currently essential for the teaching and learning process of English as a FL, there are drawbacks for the full exploitation of technology in teaching English grammar. In this regard, Tu (2022) explained that teachers and students should be equipped with the *know how* technology to avoid the occurrence of errors while using technology for the purposes of FL teaching. Students can have easy chances to cheat in the online exercises, activities and tests. This can lead to frustration on the part of good and hard-working students. Time constraint of taking online tests can be another difficulty for using technology for grammar instruction.

In this regard, Zagona, Kurth, and MacFarland (2017) and Mouchritsa, Kazanopoulos, Romero, and Garay, (2021) explained that collaborative learning covers a broad range of approaches that vary concerning the time allocated to face-to-face and online learning. The activities conducted under collaborative learning include actual classes and computer-assisted learning activities. Whereas the former represents the traditional method of teaching and learning, the latter includes the use of internet networking for the purposes of FL learning. In this context, the collaboration among learners themselves or between them and FL teachers is an essential part successful FL process. Collaborative learning is useful because it supports the social interaction among learning. So, higher-achievement learners can help the less-achievement learners understand particular function of language. As such, collaborative learning sustains the learning efforts of different groups of learners because it exceeds the limits of cooperation to teamwork roles that ensure successful learning of all groups of learners. In this concern, collaborative learning includes various team-based activities, frequent meetings among learners, self-oriented activities where learners can make decisions, monitor and evaluate their learning. Thus, the traits of collaborative learning can be exploited to overcome challenges of learning FL grammar and can provide solutions to the problems which FL learners face in comprehending different functions of English grammar. Therefore, it was necessary to examine the effect of using technology in light of collaborative learning for teaching English grammar to grade 10 secondary school students in Egypt.

## **Statement of the problem**

The achievement of grade 10 students is not satisfactory in FL grammar. Therefore, the present study examined the effect of using a technological tool like *Twitter* in light of collaborative learning on developing the achievement in FL grammar of the grade 10 secondary school students in Egypt.

## **Questions**

The present study attempted to answer the following questions:

1. What is the achievement of the control and experimental groups' students in the English grammar pretest?
2. What is the achievement of the control and experimental groups' students in the English grammar posttest?
3. Does the achievement of both groups of participants differ significantly in the English grammar posttest?
4. What is the effectiveness of using Twitter-based instruction in developing the participants' achievement in FL grammar?

## **Aims**

The present study aimed to determine:

1. The participants' achievements in the English grammar pretest.
2. The participants' achievements in the English grammar posttest.
3. Statistically significant difference between the achievement of both experimental and control groups' participants in English grammar posttest.

4. The effectiveness of using Twitter-based instruction in developing the participants' achievement in FL grammar.

### **Significance of the study**

The present study is partly significant because it is consistent with the ministry of education's goals to improve learning English among Egyptian secondary school; students. The study is also significant since its expected findings can contribute towards the process of teaching English in the participants' affiliated secondary school in particular and to that in other Egyptian secondary schools in general. The present study's significance also arises from verifying the effectiveness of technology-based programs in improving the Egyptian secondary school students' achievement in English grammar learning, particularly at the overwhelming digital age.

### **Limitations**

The expected findings are restricted to the secondary school to which the participants are affiliated. However, other secondary schools in Egypt can also benefit from such findings.

### **Literature review**

This section introduces studies that support the importance of grammar teaching and learning in TEFL process and highlight the necessity of integrating technology into the teaching of grammar.

Ghannam (2019) investigated the ways in which FL learners can develop their strategies of learning FL grammar in order to the problems and difficulties when they encounter in learning grammar. Ghannam adopted the qualitative research design as data were collected through semi-structured interviews. Questions revolved around types of difficulties

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faced students in learning FL grammar and how they can solve them out. Thirty-four undergraduates participated in Ghannam' study. The participants' answers were analyzed on the basis of thematic analysis. Ghannam emphasized that the literature of learning FL grammar is underdeveloped in comparison to that of other FL skills. In this regard, Ghannam criticized the common classification of grammar learning strategies into three types. The first type is based on learning the grammatical forms according to the implicit grammar instruction. In the second type, FL learners take part in discovering the grammar rules based on the explicit grammar instruction. In the third type, FL practice grammar rules through various learning activities based on the explicit deductive grammar instruction. Instead, Ghannam found that strategies of learning FL grammar are based on cognition, memory, metacognition, and affection.

Kayar (2020) investigated the practicality of 2018 new Turkish language curriculum which emphasized that grammar teaching should be based on the functionality. In addition, Kayar examined the effect of text-based grammar instruction on developing seventy five secondary school participants' achievement in English grammar, and the twelve secondary school teachers' opinion on the effectiveness of grammar instruction specified in the 2018 Turkish language curriculum. Data collection was based on the instruments of a pretest and a posttest of English grammar. The grammar test comprised twenty multiple choice questions. The twelve teachers' views about the text-based approach for teaching grammar were elicited through semi-structured interviews consisted of seven questions. These questions are related to the incorporation of Turkish literature into the teaching of English grammar, the avoidance of teaching phonology

and morphology under the new curriculum, the sufficiency of Turkish literary texts used to teach English grammar, and suggestions for effective teaching of English grammar. Kayar found that the FL Turkish secondary school teachers negatively viewed the grammar instruction approach contained in the new Turkish language curriculum because they encountered difficulties in its application. In addition, the tested text-based approach for teaching grammar yielded varied results in terms of improving the Turkish secondary school students' performance in English grammar. Kayar recommended the necessity of adopting different arrangements for the realization of effective application of text-based grammar instruction in the Turkish secondary schools.

Souisa and Yanuarius (2020) investigated the perceptions of senior high school teachers of teaching grammar strategies and difficulties which they encounter in teaching grammar. Sixty three teachers participated in the present study. Data were collected through various instruments such as questionnaire, in-depth interview, and observation. The participants responded to a questionnaire about their strategies in teaching grammar. Souisa and Yanuarius found that the English teachers formed their perception of teaching English grammar according to their working experience, which is based on the conceptual theories of grammar. The participants viewed grammar as the fundamental essence of language learning in order to attain good level of communication skills. As such, teachers should develop activities and teaching methods based on their conceptual knowledge. In other words, the participants viewed grammar as the catalyst of realizing the students' better communication skills. Therefore, the English teachers used to apply different approaches and strategies for teaching FL grammar. However, they still encounter

challenges in teaching FL grammar because of the students' different learning styles.

Pham and Do (2021) examined the impacts of two teaching methods, namely presentation, practice and production (PPP) and Task-based instructions (TBI) on developing the FL learners' grammar achievement while speaking and listening to English. On the contrary to the (PPP) method, Pham and Do (2021) found that TBI significantly contributed to the development of the participants' grammar achievement when practicing the speaking and listening skills. Participants were fifty nine first year non-majoring in English students enrolled in Van Lang University in Vietnam. The participants were divided into a control and an experimental group. The control group included twenty nine participants whereas the experimental group comprised thirty participants. The control group studied English grammar by using the PPP method, while the experimental group was taught English grammar by employing the TBI. The participants were pretested and post-tested in relation to their achievement in FL grammar and speaking skill. Ten participants from each group were randomly selected to answer the questions of the semi-structured interview. Pham and Do recommended the use of TBI instruction for the purpose of teaching English grammar since it provides numerous practice opportunities to FL learners. In turn, the use of TBI instruction highly motivates the students' participation in the grammar teaching activities.

Akram, Abdelrady, Al-Adwan and Ramzan (2022) reviewed the latest studies on the necessity of integrating technology to the TEFL process in Pakistan. Akram, et al. clarified that Pakistani EFL teachers positively viewed such necessary integration because technology sustains

the FL instruction practices, provides effective learning environment, and increases the students' interaction, collaboration and motivation towards learning English. Akram, et al. added that in Pakistan, the technology integration into teaching practices in state-run secondary schools is still at its early stages. However, there are concrete attempts to exploit technology for instruction purposes in private secondary schools due to their huge facilities compared with the stat-run secondary schools. Furthermore, Akram, et al. accounted for some teachers' reluctance for using technology in teaching practices. The reasons for such reluctance, among others, include their low competence in using technological devices, their tight teaching schedule, limited classroom time for using technology-based activities, lack of internet infrastructure, and slow internet speed.

Tu (2022) investigated the effect of teaching English grammar by using technology tools and the FL students' attitudes towards the use of technology in learning English grammar. The participants comprised sixty eight grade 9 students in a lower secondary school and twenty six FL teachers. The participants were asked to respond to two questionnaires to express their views about using technology in learning and teaching English grammar. In addition, data were also collected through the instruments of observation and interview. Only six students out the whole participants were selected to answer the questions of the semi-structured interview. The questions revolved around the description of students' feelings and opinions about learning English grammar via technology instruction. Tu found that the use of technology in teaching English grammar was favoured by both teachers and students. According to students' opinions, technology-based grammar instruction increased their

opportunities for self-learning and self-training. As for teachers, they can add extra time allocated for students to do exercises and tasks in English grammar. Tu emphasized the advantages of using technology for FL teachers who can have better lessons preparation, more effective and attractive instruction. Furthermore, students can have more learning opportunities; they can better understanding of the grammar rules and widen their knowledge of English grammar.

### **Method**

The present study employed the mixed methods of quantitative and qualitative analysis (Bryman, 2012, Cohen, 2011, Cohen, Manion, & Morrison, 2011, Creswell, & Poth, 2016, Ghannam, 2019 and Marghany, 2021). Quantitative analysis describes the results of participants' achievement in the English grammar pretest and posttest. It also accounts for the statistical difference in the achievement of the two groups of participants in the English grammar posttest. In addition, the qualitative analysis describes the errors made by both groups of participants in the English grammar pretest and posttest.

### **Participants**

The sixty participants were grade 10 students who have been studying English for more than ten years throughout their different educational stages. They were enrolled in a public secondary school in Egypt. Their age ranged between 15-17 years old. They comprise twenty five males and thirty five females. They were divided into two groups. That is, a control group and an experimental group with thirty participants in each group. The control group students studied English grammar using

a conventional method, while the experimental group students were taught grammar by using *Twitter*-based instruction.

## **Procedures**

The present study took place during the first term of the school year 2022-2023. All participants of the control and experimental groups took an English grammar pretest at the beginning of the first term. Then, towards the end of the first term their achievement in English grammar was post-tested. The English grammar test served as a pretest and a posttest. It includes two types of exercises: multiple choice exercises and fill in the spaces exercises with fifteen questions each. The two types of exercises were derived from the grade 10 Student's Book. The English grammar test was piloted before the pretest administration by using fifteen students. To ensure test validity, some questions, which students found difficult to answer, were replaced. The pilot study indicated that the English grammar test was reliable as the Cronbach's alpha was .89. After the pretest administration, the control group was taught English grammar by using a traditional teaching method. On the other hand, the experimental group was taught English grammar by using *Twitter*-based instruction. The *Twitter*-based instruction combined online programs and Youtube videos that have explanation, activities and exercises of the examined grammar rules as contained in the grade 10 English syllabus in Egypt. The online links of these videos are listed in the online references section. Noticeably, the experimental group students were amazingly surprised to learn grammar through the *Twitter*. They found it a good experience as they expressed their good feelings towards that experience. Indeed, they showed collaboration to assist some of them who did not have *Twitter* accounts to create ones. Even those students who had low

achievement in English in general throughout their learning journey showed interest in learning FL grammar by using Twitter.

### **Data collection instruments**

Data were collected through the instruments of English grammar test that was used for the purposes of the pretest and posttest (Fraenkel, Wallen, & Hyun, 2012, Kayar, 2020, and Pham and Do, 2021). The total score of the English grammar test was thirty marks. The test consists of two types of questions: multiple choice exercises and fill in the spaces exercises. Each type of questions contains fifteen sentences related to the grammar rules taught to grade 10 students in secondary schools in Egypt. All the test questions were derived from the grade 10 Student's Book in order to observe the test validity.

### **Data analysis**

Table 1 indicates that the participants of both control and experimental groups had almost similar performance in English grammar. This was evident as the control group's score ranged from 6-23, while that of the experimental group ranged from 7-24 marks. The two mean scores were relatively similar as (2.13) and (2.24) for the control group and the experimental group respectively. The values of the two groups' standard deviation (3.64) and (3.12) indicate that there is a great variance in the performance of both groups in FL grammar with slightly less errors for the experimental group's participants. That is, the performance of control and experimental groups' participants marked with various errors in using FL grammar.

**Table 1: Descriptive statistics of the participants' performance in the pretest**

Group	Mean Score	Standard Deviation	Minimum-Maximum
Control	2.13	3.64	6-23
Experimental	2.24	3.12	7-24

Table 2 shows types of FL grammar errors made by the participants of the two groups. The common grammar errors made by the two groups include irregular forms of the past simple tense. Participants were unfamiliar of using the past forms of verbs such as *spilt* for *spill*, *became* for *become*, *stuck* for *stick*, *heard* for *hear*, *drank* for *drink*, etc. The use of past continuous was also problematic for the two groups, particularly when it expresses a progressive action interrupted by another action in the past. In this regard, the participants found difficulty in using the expression *I got used to*. Most of the participants failed to differentiate between the usages of *have been to* and *have gone to* in the use of the present perfect tense. The participants also encountered difficulties in the present simple passive voice. The use of prepositions was also another problem that faced the participants. They could not properly use *address by*, *ask for*, *connect with*, *focus on*, *talk about*, *talk to*, *move in*, *move to*, etc. The majority of participants failed to recognize the proper usage of compound adjectives with numbers like *a forty-two old man* and *a two-day trip*. Indeed, the list of grammar errors made by the participants of both groups is endless. Other types of grammar errors are indicated in the following Table.



**Table 2 shows types of FL grammar errors made all participants**

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- Irregular forms of the past simple tense
  - *I got used to*
  - Past progressive
  - The active and passive voice
  - The present perfect tense
  - *Have been to* and *have gone to*
  - Compound adjectives with numbers
  - Prepositions
  - The affirmative form of Be+ going to+ infinitive
  - The negative form of Be+ going to+ infinitive
  - Making yes/no questions of Be+ going to + infinitive
  - Making questions of Be+ going to+ infinitive by using question words (When, where, who, etc.)
  - The passive voice of Be+ going to + be+ pp.
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Table 3 clarifies that there was improvement in the two groups' performance in English grammar in the posttest due to the two types of instruction: the conventional method and the Twitter-based program. However, the experimental group participants highly outperformed the control group participants in English grammar. Evidently, the posttest score of the experimental group participants ranged from 17-28 marks. The minimum score of the control group (10) lagged behind that of the experimental group (17). This means that a number of the control group

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students failed the posttest vis-à-vis none of the experimental group participants. In addition, the maximum score of the experimental group (28) was higher than that of the control group.

**Table 3: Descriptive statistics of the participants' performance in the posttest**

<b>Group</b>	<b>Mean Score</b>	<b>Standard Deviation</b>	<b>Minimum-Maximum</b>
Control	3.65	5.768	10-25
Experimental	7.29	4.043	17-28

Table 4 shows the improvement of the experimental group's performance compared to that of the control group participants in the posttest. The list of FL grammar errors made by the experimental group includes less grammatical items in comparison with that of the control group. In the posttest, the experimental group's grammar errors were restricted to the proper usage of prepositions, past irregular forms, the difference between *Have been to* and *have gone to* in some cases and making WH-questions with Be+ going +to +infinitive. On the contrary, the list of grammar errors made by the control group covered various grammar rules.

**Table 4: Types of grammar errors made by the two groups**

<b>Control Group</b>	<b>Experimental Group</b>
- Irregular forms of the past simple tense	- Irregular forms of the past simple tense
- <i>I got used to</i>	- Prepositions
- Past progressive	- <i>Have been to</i> and <i>have gone to</i>
- The active and passive voice	- Making questions of Be+ going to+ infinitive by using question words (When, where, who, etc.)
- The present perfect tense	
- <i>Have been to</i> and <i>have gone to</i>	
- Compound adjectives with numbers	
- Prepositions	
- The affirmative form of Be+ going to+ infinitive	
- The negative form of Be+ going to+ infinitive	
- Making yes/no questions of Be+ going to + infinitive	
- Making questions of Be+ going to+ infinitive by using question words (When, where, who, etc.)	
- The passive voice of Be+ going to + be+ pp	

Table 5 of the Paired Samples T-Test shows the difference between the control group's performance in the pretest and the posttest was not

statistically significant. However, the experimental group's performance in the posttest differed significantly from its performance in the pretest. In addition, Table 6 of the Independent Samples T-Test indicates that there was a statistically significant difference between the experimental group's performance and that of the control group in the posttest. The results are similar to those of Kayar (2020) and Pham and Do (2021).

**Table 5: The Paired Samples T-Test**

T	M	SD	N	DF	t-value	Sig.
Pretest control group score	2.13	3.64	30	29	1.321	.062
Posttest control group score	3.65	5.768	30	29		
Pretest experimental group score	2.24	3.12	30	29	4.320	.000
Posttest experimental group score	7.29	4.043	30	29		

**Table 6: The Independent Samples T-Test**

Group	N	M Gain Score	SD	DF	t-value	Sig.
Control	30	1.52	2.12	29	2.999	0.000
Experimental	30	5.05	0.92	29		

### **Results, discussion and implications**

The performance of both examined groups in FL grammar was relatively similar in the pretest. Both groups of participants had common grammar errors related to the irregular forms of past tense, the present simple passive voice, the use of past progressive, compound adjectives

with numbers and prepositions. In addition, the control and experimental groups had difficulty to use got used to and to differentiate between *have been to* and *have gone to*. The FL grammar performance of the two examined groups highly differed in the posttest. The experimental group participants highly outperformed the control; group participants due to the use of *Twitter*-based program. That is, the posttest performance was remarkably marked with less grammar errors on the part of the experimental group participants. Meanwhile, the FL grammar performance of the control group participants was improved in comparison to their pretest performance. However, their posttest performance was not as satisfactory as that of their experimental group counterparts. Furthermore, there was statistically significant difference between the two groups' FL grammar performance in favour for the experimental group participants. This finding is compatible with those reported by Kayar (2020) and Pham and Do (2021).

The current study concluded that *Twitter*-based instruction is effective in teaching FL grammar to secondary school students. The finding is similar to that reported by Taimalu and Luik (2019), Gnambs (2021), Xu, et al. (2021), Akram, et al. (2022), and Tu (2022). At present, the TEFL process requires innovative teachers who amply make use of technology in providing language instruction. In this regard, *Twitter* is a useful technological tool that can help yield better learning outcomes and further improvement of secondary school students' FL achievement, particularly in grammar. Thus, FL curricula planners have to seriously consider technology integration into FL syllabi at various educational levels to facilitate the practice and instruction of different language skills. In this regard, the technology integration into FL curricula should be

fostered in public schools. Those schools are in need of having the necessary facilities and equipment which enables teachers and students to utilize the ample advantages of using technology for teaching and learning purposes.

The teacher-training and preparation programs should take into consideration the necessity of equipping teachers with necessary technological skills that enables them incorporate technology into their instruction. This is attributed to the changeable nature of FL teaching process in which learners have become more reliable on technology to satisfy their learning needs and fulfill their learning achievements.

### **Recommendations for further research**

The current study provided the following recommendations:

1. A study can be conducted to explore FL teachers' perception and beliefs about integrating technology into FL instruction in both public and private secondary schools in Egypt.
2. A study can be replicable to examine the effectiveness of technology-based instruction on the secondary school students' achievement in other language skills like pronunciation, reading, and writing.
3. The effect of other technological tools on teaching and learning English in secondary schools in Egypt can also be investigated.
4. A study can investigate the FL teachers' beliefs and perception of utilizing technology in FL instruction at the secondary school level.
5. A study can examine the variables affecting FL teachers' preparation and training courses in terms of technology utilization.
6. A study can deal with the necessary measures for equipping the public secondary schools with technology to facilitate FL instruction.

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