

# The Effectiveness of Flipped Classroom Approach on Students' Achievement in English Language in Saudi Arabian Southern Border Schools

Ali H. Najmi<sup>1</sup>

<sup>1</sup> Faculty of Education, King Abdulaziz University, Jeddah, Saudi Arabia

Correspondence: Ali H. Najmi, Faculty of Education, King Abdulaziz University, Jeddah, Saudi Arabia.

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## Abstract

The multi-shift schooling system was adopted in Saudi Arabian southern borders schools as a result of the Arab coalition efforts to end the coup and restore the state institutions in Yemen. This has left the education community with the perception of inadequate learning time and the possible of creation of learning deficits for all students involved. Using the flipped classroom approach, this study explores this perception of learning and educational gaps resulting from the reduction of the class time and the school day. This study was executed in 2018 and used a quasi-experimental approach to explore the impact of the flipped classroom approach on students' academic achievement in English language. A pre and post test was utilized to obtain the data. The result revealed that students taught in a flipped classroom approach achieved higher than their counterpart peers taught in the traditional approach. The study recommended the use of the flipped classrooms approach in hazardous areas or areas where there is a need to adopt multi-shift schooling system.

**Keywords:** flipped classrooms, teaching approaches, learning approaches

## 1. Introduction

As the Arab coalition attempted to end the coup and restore the state institutions in Yemen, the Saudi Arabian government has undertaken some precautionary procedures to ensure the safety of its citizens in the southern border. These precautions involved accommodating schools in the border side to schools in safe areas far away from the border and military activities. Nevertheless, while these precautions were necessary, it led to the adoption of the multi-shift schooling system (up to three shifts in a school), which resulted in the reduction of the class time and the school day. There is a concern that such a reduction of the school day and the shortening of class time may result in gaps in students' education.

As explained in the previous section, precautionary procedures have been undertaken to ensure the continuation of the schooling in the areas close to the southern border affected by the military activities. As a consequence, the school day and the class time was reduced as a result of the multi-shift schooling system adopted in those schools. This has left the education community with the perception of inadequate learning time and the possible of creation of learning deficits for all students involved. Using the flipped classroom approach, this study explores this perception of learning and educational gaps resulting from the reduction of the class time and the school day. The flipped classroom is a blended and student-centered teaching approach in which foundational content is delivered to students before the class so they can learn at their own pace at home, allowing the teacher to engage students in authentic and active learning experiences during class time (McLaughlin & Rhoney, 2015).

Given that the flipped classrooms approach requires allocating content to students prior to the class, and frees up actual class time for active learning experiences, such an approach seems to be a good solution for the issue of the learning and educational gaps resulting from the reduction of the class time and the school day. In this study, the flipped classroom approach is employed to enrich students' learning and enable extra time to learn out of the classroom.

Therefore, the objective of this study is to compare the effectiveness of the flipped classroom approach to the traditional instructional approach in Saudi students learning of English Language in the Saudi Arabian southern border schools. The study seeks to investigate if there were any statistically significant differences between the achievements of the Experimental Group (students taught using the flipped classroom approach); as compared to

the control group (students taught using the traditional instructional approach).

## 2. Literature Review

### 2.1 Flipped Classroom

Flipped classroom is a trending pedagogical approach that has gained a lot of attention (Abeysekera & Dawson, 2015; Khan & Watson, 2018). It has been acknowledged by many researchers as an innovative and effective pedagogical approach (Hwang, Lai, & Wang, 2015; McLaughlin & Rhoney, 2015). The flipped classroom is a student-centred approach to teaching and learning that stresses student's active engagement in the learning process (McLaughlin & Rhoney, 2015; Steen-Utheim & Foldnes, 2017). Basically, flipping the classroom refers to the practice of assigning and presenting teaching content to students with videos or other media outside of the classroom and assign class time to a variety of learning activities that help students to assimilate knowledge, through authentic, and active learning experiences, such as group work and problem-solving (DeLozier & Rhode, 2016) that utilizes the content accessed by the students prior to the classroom instruction.

The flipped classroom can be defined as a pedagogical approach that moves information-transmission teaching practices out of class and allows authentic and active learning activities to be actualized in the classroom with students engaging in pre- and/or post-class activities (Abeysekera & Dawson, 2015). The flipped classroom approach employs various media such as video and audio recordings, and texts, and facilitates in-class hands-on collaborative activities (Turan & Goktas, 2016). Among those media, video recordings are commonly used as a typical pre-class learning material in the flipped classroom (Long, Logan & Waugh, 2016).

Abeysekera and Dawson (2015) provided a characterization for the flipped classrooms which include:

- A change in the use of in and out-of-class time with pre- and post-class activities.
- Doing activities traditionally considered 'homework' in class and those considered as in-class work out of class.
- In-class activities that support in-depth learning, authentic learning, active learning, collaborative learning and problem-solving.
- Use of technology, especially video. (p. 3).

One important feature of the flipped classroom approach is that it promotes a paradigm shift in teachers and students' roles. That it is a student-centred approach to teaching and learning can be realized when the flipped classroom approach is executed (Persky & McLaughlin, 2017; Steen-Utheim & Foldnes, 2017). In this approach teachers are more likely to act as guiders and facilitators to students' learning rather than a dispenser of knowledge. Students, on the other hand are more likely to be actively engaged in learning activities during the class time and preparatory works prior to the class time (Steen-Utheim & Foldnes, 2017). In this regard, Turan and Goktas (2016) explained that the flipped classroom approach is a new culture for both teachers and students, and it may take time for teachers and students alike to become familiar and adapt this new approach. Therefore, Turan and Goktas (2016) suggest that the flipped classroom should not be seen as only a teaching method but also as a culture. A further advantage of the flipped classroom approach is that it empowers students to take responsibility and ownership of their learning and progress at their own pace (Khan & Watson, 2018; O'Flaherty & Phillips, 2015). Moreover, the flipped classroom approach has the potential to equip students with the 21st century skills (Enfield, 2013; O'Flaherty & Phillips, 2015).

Importantly, flipped classroom provides extra time for teaching and learning. In this regard, Bergmann and Sams (2012) explained that "once you have set up your flipped class and made your videos, you will find yourself with extra time, a luxury you probably have never had in your career as a teacher" (p. 47). Indeed, a significant benefit of the flipped classroom is that it frees up actual class time for authentic learning experiences. The flipped classroom approach frees instructional time and therefore permits time for interactive and dynamic classroom learning experiences and activities (Hsieh, Wu, & Marek, 2017). In a similar vein, numerous studies have indicated that when implemented effectively, this approach allows more time for hands-on and authentic learning activities and it can improve students' academic performance, interaction, engagement, and motivation (Almodaires, Alayyar, Almsaud, & Almutairi, 2019; Bergmann & Sams, 2012; Schmidt & Ralph, 2016). Further, when compared to students taught using a traditional approach, students in the flipped classroom approach are expected to come to class well prepared and ready to engage in authentic classroom learning activities.

### 2.2 Flipped Classroom in Language Classrooms

A flipped classroom is believed to have a sound impact on students learning in a variety of school subjects. For example, Love et al. (2014) found that the flipped classroom deepened the students understanding of algebra

course content. Another study indicated that the incorporation of self-regulated flipped classroom approach in an elementary school Mathematics course improved the students' learning achievement, self-efficacy, and self-regulation (Lai & Hwang, 2016).

Further, the flipped classroom approach indicates potential for use in language teaching (Han, 2015). Studies have revealed that the flipped classroom approach has a positive effect on students' proficiency and performance in English language. For example, Hung (2015) and Lee and Wallace (2017) found that the flipped classroom enhanced students' academic performance in English language. Furthermore, the Al-Harbi and Alshumaimeri (2016) study revealed that the adoption of a flipped classroom approach was effective in enhancing students' performances in English language grammar. Lin and Hwang (2018) conducted a study to examine the efficiency of online community-based flipped classrooms in the oral component of the English language. Their study revealed that the flipped classroom approach had a positive impact on students' oral performance. In a similar way, Obari and Lambacher (2015) compared a flipped classroom approach with a traditional classroom teaching approach and they noted that the flipped classroom was effective in improving students' speaking skills in English language.

In English language classes, the flipped classroom approach can offer great benefits for both the students and teachers as class time can be invested for more authentic and interactive tasks. By extending classroom hours in this way, such an approach is likely to be effective in English language classes as it allows students extra opportunities and time to practice the language. It can also empower teachers to focus on addressing all contents of the curriculum (Basal, 2015). In the flipped classroom, students take responsibility for their own learning process. That is, the flipped classroom approach assists students to practice autonomous English learning materials prior to the class and then participate in collaborative activities in class. Hsieh et al. (2017) explained that students repeated exposure to the learning content and resources deepens and extends their learning of the content. In a similar vein, Alsowat (2016) argues that one of the important advantages that the flipped classroom approach provides to English language learners is that it gives the students the opportunity to practice and review the learning materials and resources at their own pace. Such a feature is missing in the traditional English language classes that usually have many restrictions in language teaching such as time constraints and the lack of appropriate educational resources that can facilitate positive interaction between learners and teachers. Furthermore, in English language classes, the flipped classroom approach assists the students to be motivated to learn by accessing a variety of English input and learning materials using information communication technologies (Han, 2015; Lin & Hwang, 2018).

### **3. Learning Theories and Flipped Classrooms**

The flipped classroom approach is underpinned by many learning theories (Abeysekera & Dawson, 2015; Long, Logan, & Waugh, 2016; McLaughlin & Rhoney, 2015; Ng, 2014). These theories include constructivist theory, social development theory, self-determination theory and cognitive load theory.

The use of the flipped classroom approach in English language teaching and learning is supported by the constructivist theory, which holds that learning is an active process that often happens in a social context and that the learner is the focus of learning processes as he interacts with his peers in order to construct his knowledge and experiences (Xu & Shi, 2018). Thus, using the flipped classroom approach in language teaching and learning offers this active learning environment in which the learners are given the full opportunity for social communication to improve their language skills through dynamic and interactive interaction between learners.

Social development theory placed emphasis on students learning within their social groups or with social contact and others, rather than individualistic learning. In this theory, the role of others and the social interaction with them is essential in the process of learning and making meaning. The theory argues that social interactions precede cognitive development and social interactions empower students to make deeper meaning of new information (Clark, 2018; Ng, 2014). Students involved in a flipped classroom approach will be actively constructing meaning when working collaboratively with their classmates and others.

Self-determination theory is a theory of human motivation that differentiates motivation in terms of being autonomous and controlled. According to this theory, there are two types of motivations: intrinsic and extrinsic motivation. This theory suggests that people have three basic psychological needs of competence, relatedness and autonomy (Khan & Watson, 2018; Legault, 2017; Alhalafawy & Zaki, 2019). Given that a flipped classroom strongly depends on students doing activities outside the school, their motivation to undertake the activities autonomously plays a critical role in the successful implementation of such an approach. Self-determination theory is obviously of relevance to the flipped classroom approach as it represents a useful theoretical lens for flipped classrooms implementation (Abeysekera & Dawson, 2015). Flipped classrooms grant a learning context that satisfies student autonomy and is likely to enhance their motivation to do the related tasks.

Cognitive load theory (CLT) indicates that the greater the number of learning resources and elements and the relationships between them, the greater the load on the learner's cognitive system and the more difficult the subject content becomes. One of the solutions that can be taken into account to solve this issue is to allow the learner sufficient time to handle all the learning elements and map out the relationships between them and process the given information (Sweller, Van Merriënboer, & Paas, 1998). This can be done via the flipped classroom approach by segmenting the learning materials and resources across two phases before and during the class time. Segmentation comes as a solution that complies with the proposals of the cognitive load theory to allow the learner sufficient time to process video based educational presentations that includes a variety of educational elements and topics (Spanjers, van Gog, & van Merriënboer, 2010; Al-halafawy & Zaki, 2014). The segmentation process can be applied in practice via the flipped classroom platforms, as these platforms provide tools for segmenting and providing pauses through the digital videos that enable the learners to process, learn and review all of the displayed English language information. Similarly, Abeysekera and Dawson (2015) and, Karaca and Ocak (2017) indicated that if well structured and implemented, flipped classroom approach can reduce the cognitive load as a result of the students, self-pacing while viewing the video content before the class.

#### 4. Method

A quantitative research design was employed to explore the objective of the current study.

##### 4.1 Research Design

The current study employed a quasi-experimental approach to investigate the impact of the flipped classroom approach on students' academic achievement. The participants were assigned into one of two groups: the control or the experimental group. A pre-test was administered to both groups to verify their homogeneity of the two groups. A post-test was administered to both groups at the end of the treatment to determine the differences between the two groups.

##### 4.2 Participants

The study sample comprised of (60) female students in the fifth grade in one of the Saudi Arabian Southern border's schools. They were randomly assigned into a control group (n=30) and an experiment group (n=30).

##### 4.3 Instruments of the study

The present study used the following instruments.

- 1) Pre-test: The pre-test was conducted to ensure the equivalence among the experimental and control groups, and to ensure the homogeneity of the participants in the groups. The "t" test was used to compare between the experimental and the control groups, as it is the standardized test for two independent groups. Unlike "F" test, "t" test is the recommended test to compare and show differences between groups (Moser, Stevens, & Watts, 1989). The results of the "t" test showed that the average score for the experimental group was (4.45), while the average score of the control group was (4.40), and the value of "t" was (0.108). This means that the two groups were equivalent and that any statistical differences that appeared in the post-test can be attributed to the implementation of the flipped classroom approach.
- 2) Post-test: post-test was used to measure the students' achievement after the treatment. It consisted of (13) questions testing students' knowledge of lesson 1 and 2 'Words in Action' unit 2 'From Here to There' in the 5th grade English Language textbook 'We Can 4' Published by McGraw-Hill Education. To verify the validity and reliability of the test, a group of reviewers evaluated the test; they suggested some modifications which were adapted in the final draft of the test.

##### 4.4 Procedures

The procedures of this research study have been implemented in the following sequence:

Firstly, the study started with the clarification of the problem that needed to be addressed in the current research and the students' characteristics were accomplished as follows:

- 1) The reduction of the school day and the class time to accommodate the multi-shift schooling system was a process which is perceived to result in gaps in student learning and education. A further perception is that this issue can be addressed by using the flipped classroom approach.
- 2) The students' use of technology and the mobile technology were considered. The data obtained from the school's student counsellor showed that (96%) of the students usually use their parents' mobile phones to play games and to access WhatsApp application and YouTube.

The following phase of the procedures was the design of the educational objectives and the educational tasks. The

educational objectives were related to lesson 1 and 2 'Words in Action' unit 2 'From Here to There' in the 5th grade English Language textbook 'We Can 4' Published by McGraw-Hill Education. A list of educational objectives was established which included six objectives.

The educational tasks in the current study were divided into two stages (before and during the class for the experimental group and during and after the class for the control group). More specifically, both groups covered the same content (words in action) and undertook the same learning activities. However, the flipped classroom approach entails inverting the events of the class, therefore, during the class; the control group was taught using traditional teaching methods in which the teacher transfers information to the students in the class using direct teaching techniques. Various learning activities, including discussions, clarifying of misconceptions and collaborative learning would then follow. Students were required to do extra activities and homework at home after the class.

For the experimental group, content in video recordings format, was delivered to the students prior to the class via the WhatsApp application. By contacting the students' parents, the teacher ensured that all the students watched the video recordings. During the class, students engaged in activities related to the videos that they watched before class. These activities included discussion, clarifying misconceptions and collaborative learning. To examine the impact of the flipped classroom approach on students' achievement in Saudi Arabian Southern borders schools, a post-test was conducted on the two groups.

The next phase of the procedures was the development phase. In this phase, the recording of the videos explaining the content of the lessons that would be sent to the students' in the experimental group were recorded. The length of each video was about seven minutes and the language level was suitable for 5th grade students. These video recordings were sent to the students prior to the class via the WhatsApp application in their parents' phones. Finally, in the implementation phase was employed in two stages before and during the class for the experimental group and during and after the class for the control group.

## 5. Findings

As stated earlier, the current study sought to examine the impact of the flipped classroom approach on students' academic performance in English language in the Saudi Arabian Southern borders' schools. To achieve this goal, the following hypothesis was tested: "there are no statistically significant differences at the level of significance (0.05) between the mean scores of the students of the control group who used the traditional teaching method and the students of the experimental group who used the flipped learning approach in their academic performance in English language". In order to test this hypothesis and to examine the differences between the pre- and post-test, a t-test was conducted.

Table 1. The control and experimental groups in the post-test administration

Group	N	Mean	Std. Deviation	t	df	Sig.
Control Group	30	9.30	1.08	8.34	38	(0.00)
Experimental Group	30	12.95	1.61			

Table 1 illustrated that there are statistically significant differences between the mean scores of the control group who were taught using the traditional teaching method and the experimental group who were taught using the flipped learning approach in their academic performance in English language in the post-test". More specifically, Table 1 shows that the mean scores of the control group was (9.30) whereas the mean scores of the experimental group reached (12.95). The value of "t" was (8.34).

Therefore, the results indicate that there is statistically significant difference in the mean scores of the control and experimental groups in favour of the experimental group. Accordingly, the hypothesis of the study was rejected and reformulated as follows: there is a statistically significant difference at the level of significance (0.05) between the mean scores of the control group which used the traditional teaching method and the experimental group which used the flipped learning approach in their academic performance in English language in favour of the experimental group; due to the effect of the flipped learning approach.

Furthermore, the effect size is a way of asserting the strength or magnitude of a reported relation. For example, in an experimental study the effect size expresses how much better (or worse) the experimental group performed on a task or test as compared to the control group (Gay, Mills, & Airasian, 2012). According to the formula of Gay and his colleagues, the effect size can be calculated by the difference between the mean (average) of the experimental

group and the control group then dividing the difference by the standard deviation of the experimental group. It was found that the effect size was (2.27), which means the presence of a large size effect for the flipped classroom approach on the students' achievement in English language. This large size effect for the flipped classroom approach gives it an advantage over the traditional English language teaching classes.

## 6. Discussion

The current study aimed to examine the effectiveness of the flipped classroom approach on the Saudi students' learning of English Language in the Saudi Arabian southern border's schools. In this study, the flipped classroom approach was shown to be an effective pedagogical approach in Saudi Arabian southern border's schools' students' learning of English Language. Results revealed that students taught in a flipped classroom approach achieved above their counterpart peers taught in the traditional approach.

This result can be partially explained in terms of the active flexible learning environment that the flipped classroom facilitates to the students. The autonomous learning opportunities that this approach provides for the students allow students to practice English learning materials prior to the class and in class they can engage in collaborative activities. That is when students prepare before class at home by watching video recordings, they can learn at their own pace because they are free to stop, pause, and replay the videos (Hsieh et al., 2017). Given that, the traditional teaching approach often does not provide enough time for both content presentation and hands-on activities (Fautch, 2015). The flipped classroom, on the other hand, requires preparatory work prior to the class time and frees up class time for authentic learning tasks, therefore, this result can be explained by the extended time that flipped classroom approach provide and by the dynamic and interactive learning environment that it grants. In addition, providing video recordings of the lessons that students could watch as many times as needed greatly reduces the need for repetitive instruction and helps to address the perceived teaching time concerns resulting from reducing the class time and the school day.

The results of the current study were consistent with the results of a number of previous studies showing the effectiveness of the flipped classrooms approach. The current study has compared an experimental group that utilized the flipped classroom approach and a control group that relied on the traditional teaching approach. For example, the results of the current study were consistent with Missildine, Fountain, Summers, and Gosselin (2013) study which compared three approaches to learning traditional lecture only, lecture and lecture capture back-up and the flipped classroom approach, the results' of Missildine et al. (2013) study showed that the examination scores were higher for the flipped classroom approach compared to the other approaches. Given that the current study has succeeded in improving the students' achievement in English language, this was also consistent with what was suggested by Thai, De Wever, and Valcke (2017) study, which indicated that flipped classrooms have the potential to improve self-efficacy, internal motivations, and cognitive flexibility of the students, which is generally reflected in the positive performance of the students in all aspects of knowledge and performance. The results of the current study were also consistent with the study of Sergis, Sampson, and Pelliccione (2018) that analysed the results of (3) applied studies concerned with the application of the flipped classroom approach in various educational situations. The results of the study and the analysis process emphasized the effectiveness of the flipped classroom approach in enhancing students' achievement. The results of the current study were also coinciding with those of other previous studies (e.g. Hung, 2015; Hsieh et al., 2017; Lee & Wallace, 2017) showing that the flipped classroom approach was effective in English language classrooms.

## 7. Conclusion

Using the flipped classroom learning approach, this study sought to explore the perceived learning and educational losses resulting from the reduction of the class time and the school day in some of the Saudi Arabian Southern border schools as the result of the security situation resulting from the war. Based on the findings of the study, the flipped classroom learning approach is considered to be an effective learning approach in English language acquisition for 5th grade female students in a multi-shift school setting. The study provided a flexible learning environment that combined both an online learning community and physical classroom instruction enabling students to use materials prior to the class to learn the content and during the class they apply the learned knowledge in a richer and deeper scope – thus creating additional class time. Giving the students the chance to be exposed to the content and prepare for the lesson before the class by watching the videos at their own pace allows more time for learning. The in-class activities are dedicated to strengthening and deepening the students' learning and understanding. Such a result shows that flipped classrooms can be an effective approach of teaching in hazardous areas or areas where the class and school time is reduced for any reason, as this approach involves preparatory works prior to the class time and frees up class time for learning activities.

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