

# An EFL Flipped Classroom Teaching Model: Effects on English Language Higher-order Thinking Skills, Student Engagement and Satisfaction

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## Abstract

This study aimed at investigating the effect of a suggested EFL Flipped Classroom Teaching Model (EFL-FCTM) on graduate students' English higher-order thinking skills (HOTS), engagement and satisfaction. Also, it investigated the relationship between higher-order thinking skills, engagement and satisfaction. The sample comprised (67) graduate female students; an experimental group (N=33) and a control group (N=34), studying an English course at Taif University, KSA. The study used mixed method design; a pre-post HOTS test was carried out and two 5-Likert scale questionnaires had been designed and distributed; an engagement scale and a satisfaction scale. The findings of the study revealed statistically significant differences between the two group in HOTS in favor of the experimental group. Also, there was significant difference between the pre and post administration of the engagement scale in favor of the post administration. Moreover, students satisfaction on the (EFL-FCTM) was high. Finally, there were high significant relationships between HOTS and student engagement, HOTS and satisfaction and between student engagement and satisfaction.

**Key Words:** flipped Classroom; English Language; HOTS; Engagement; Satisfaction.

## 1. Introduction

### 1.1 Background of the study:

Traditional teaching is almost teacher-centered which conflicts with the constructivist approaches to teaching and learning (Brooks, 2002). The problem with traditional lectures –especially in higher education- is a matter of pacing. For some students, the information presented in class may be known for them; other students may have trouble taking in information so rapidly, or they may lack the prior knowledge needed for understanding the concepts presented (Goodwin & Miller, 2013). New trends in teaching and learning seek to enhance student-centered instruction; in which students take responsibilities of their learning in environments that encourage participation, critical thinking, problem solving, variety of activities, group work and meaningful interactions instead of rote memorization which results in passive students who are incapable of growth and development. "For many decades, scholars, political leaders, and the public have been calling the attention of educators and administrators to embark upon a profound transformation of our institutions of higher education" (Grazzados-Bezi & College, 2015:69). Consequently, educators suggested various learning models to overcome this drawback. One of these is the blended learning which involves a mix of face-to-face and online interactions. The goal of blended learning is to facilitate greater student learning and enhance learner-centered paradigm (Shibley, 2014). Flipped instruction is a form of blended learning in the way that it connects face-to-face with online learning. But it differs since outside activities used in flipped classrooms should not be necessarily online; they may involve paper and hard copies materials. So videos are not mandatory in flipped classrooms and the implementation of instructional videos does not imply flipping a classroom. The flipped classroom is a unique educational environment which emerged during the last few years and is quickly gaining in popularity among educators worldwide (Obari & Lambacher, 2015). The flipped classroom is a pedagogical model where traditional lecture and homework elements of a course are reversed. It inverts traditional teaching methods, delivers instruction outside of class and moves homework into the classroom (Du, Fu & Wang, 2014). It allows teachers to spend greater amounts of time tutoring students in place of lecturing them (Wallace, 2014). In the flipped classroom model, the role of the teacher has changed from a provider of knowledge to a guide, facilitator and organizer (Basal, 2015).

### 1.2 Statement of the problem:

Learning English as a foreign language requires the use of new innovations in teaching and learning, since acquiring a language is almost a social act which involves students' activeness and participation. In the Saudi context, students are not often exposed to language, so this may result in severe consequences which lead eventually to weakness and poor achievement of English language. The flipped classroom enables students to be familiar with the English language outside the classroom by watching educational videos, PowerPoint presentations chosen and prepared by teachers, listening to audios, and/or reviewing papers related to the course being taught. Inside the classroom, teachers take advantage of class time to discuss the ideas appeared, to enhance thinking, collaborative learning and to provide different student-centered activities. There is small research in general on the flipped classroom, more specifically, there is a noticeable absence of work exploring

flipped instruction in the field of language learning (Egbert, Herman & Cluing, 2015). Research conducted in teaching and learning English language using flipped instruction dealt with this subject from different perspectives. Some studies (Basal, 2015; AlRowais, 2014; Mehring, 2014) explored students' perceptions and attitudes toward using flipped classrooms. Others such as (Engin, 2014; Farah, 2014) applied flipped classrooms in teaching English language writing and found that flipped instruction was effective and had positive impact on students' writing performance. Moreover, Obari & Lambacher's study (2015) aimed to investigate using mobile technologies in a flipped classroom and revealed that flipped classrooms had a positive impact on English language achievement. Moran (2014) concentrated on the impact of flipped classrooms on engagement and found that low motivated students' engagement decreased. This study -to the researcher's best knowledge- is the first attempt to suggest an EFL Flipped Classroom Teaching Model (EFL-FCTM) and assess its impact on higher-order thinking skills since flipped instruction ought to enhance these skills due to the innovative activities carried out in class. It also aims to examine student engagement and satisfaction in the higher education setting in order to bridge the gap in flipped classrooms research. The current study seeks to answer the following questions:

1. What is the nature of the suggested EFL Flipped Classroom Teaching Model (EFL-FCTM)?
2. What is impact of the EFL-FCTM on students' English language higher-order thinking skills?
3. What is the impact of the EFL-FCTM on student engagement?
4. What is the impact of the EFL-FCTM on student satisfaction?
5. Are there any significant relationships between students' higher-order thinking skills, engagement and satisfaction?

## 2. Review of Literature:

### 2.1 *The Flipped Classroom:*

The constructivist approach to teaching calls on learners to become active classroom participants by placing the passivity of listening to a lecturer and to devote face-to-face classroom valuable time for peer collaboration, inquiry, and project-based learning. Traditionally, teachers spend class time introducing basic concepts, explaining ideas, asking students to read, giving boring lectures and so on. So, classes are teacher dominant. As a reaction to teacher-centered learning, the flipped classroom gives instructors valuable tools in changing these practices by freeing class time to better assess student learning and using class valuable time to help students apply the knowledge they gained through online lectures, notes, etc (Dickenson, 2014; Prodoehl, 2015).

The concept of the flipped classroom is a combination of reversed inside and outside classroom activities. Students take the responsibility of the outside-classroom activities through watching videos, visiting course-related websites, listening to audios, reading related references etc. On the other hand, teachers have to create an interactive inside-classroom environment which enhances pair work, group work, hands-on activities and high-level thinking activities. Ogden, Pyzdrowski & Shambaugh (2014:49) state that the flipped classroom approach to teaching is "a pedagogical design that replaces what typically takes place during a face-to-face lecture (passive transfer of knowledge) with engaging activities and assigns the lecture as homework for students to complete autonomously outside of class".

"The flipped classroom is an instructional approach that educators use to turn the traditional classroom lecture model into a more active learning classroom" (Keengwe, Onchwari & Oigara, 2014:xviii). Flipped learning is an individualized learning. In the flipped classroom, teachers are implementing differentiated instruction, problem/project-based learning, inquiry-based study, so flipped learning is fundamentally learner-centric (Bergmann & Sams, 2014a). The flipped approach emerged in 2006 and is characterized by the use of Screencasting to deliver instruction that can be accessed at any time and place (Dickenson, 2014). The flipped classroom is not a synonym for online videos; it is the interaction and the meaningful learning activities that occur during the face-to-face time. It is an environment where students take responsibility for their own learning and are engaged in their learning and get a personalized education (Cross & Board, 2014).

In recent years, the flipped classroom has become increasingly popular in higher education . It involves assigning students to work through the basic content of a course on their own time, often by watching a recorded lecture or completing a guided reading instead of listening to a traditional in-person lecture and frees up class time for group problem-solving assignments, demonstrations, experiments, questions and answers, and other engaging experiences (Saitta, Morrison, Waldrop & Bowdon, 2016:1) The flipped classroom is adaptable to teacher's style, methods, and circumstances; teacher can personalize his/her version of flipped learning for his/her students and play to their individual strengths as educators (Bergmann & Sams, 2014a). In the higher education, educators have begun to gradually move parts of their content distribution outside of the classroom. Therefore, time has been freed up inside of the classroom for further exploration. Students have positive feedback about the experience, and additionally student assessments and content retention have improved. (Bane, 2014). Flipped Learning has a deep impact on the professional lives of teachers, but more importantly, it positively affects the lives of students (Bergmann, & Sams, 2014a).

Educators and instructors have to embrace three considerable ideas tied to the flipped classroom. First, prior knowledge is required to scaffold deeper learning. Second, students learn best when they are engaged in what they are learning. Third, the flipped classrooms enable a sustained learning path that continues even after the class ends (Schell &

Mazur, 2015). Successful flipped learning environments consist of a number of components. The first component is collaboration because it is difficult to incorporate flipped learning alone. Although the flipped classroom may appear disorganized, loud, or even messy, but the collaboration taking place in the flipped classroom helps in student learning. The second is student-centered learning since the flipped classroom learning embraces a shift from teacher-dominant practices, such as presentations and lecturing to student-centered learning in which a teacher is a facilitator of learning. The third component is the optimized learning spaces so in flipped classrooms, teachers should not be the focus. The whiteboards, LCD projectors, videos, and new technology should be in the center of attention of class for more engagement and dynamicity. Adequate time for implementation is the fourth component in which a great deal of time is required to implement the various activities that flipped classroom entails. The fifth component is the need of support from administrators. Implementing the flipped classroom requires cooperation of other teachers and principals to provide professional development and resources to make the flipped classroom successful. Finally, the IT departments in universities should offer access to videos, websites and design on and off-line platforms to enhance flipped classroom learning (Bharali, 2014; Bergmann & Sams, 2014b; Mathews, 2015).

### 2.2 Higher-order Thinking Skills (HOTS):

Bloom's taxonomy is an instructional framework that is often used to determine the outcomes of teaching and learning (Bergmann & Sams, 2014b). The revised Bloom's taxonomy has six levels: remembering, understanding, applying, analyzing, evaluating and creating. Creating is the highest level of the cognitive domain. The highest three levels of Bloom's taxonomy (analyzing, evaluating and creating) are known as higher-order thinking skills (HOTS). When teacher-centered learning is dominant, teachers exercise too much control over their students, with the result that students tend to learn facts rather than deep concepts (Koch, 2016), so learning does not go beyond the three lowest levels of Bloom's taxonomy. In the past two decades, educators discovered that higher-order thinking skills did not appear automatically in most students, so that specific higher-order thinking skills should be taught explicitly and directly at various points in a unit or during a semester. (Williams, 2015).

In the flipped classroom, the constructivist theory is obvious since students take their learning responsibilities, so Bloom's taxonomy is turned upside down. Students have to practice remembering, understanding and applying at home through watching video, visiting course-related websites, listening to audios or at least reading the lesson. In class, teachers help students analyzing, evaluating and creating the knowledge been assigned. Therefore, teachers spend their valuable class time with students as they engage in activities that require upper-levels skills of Bloom's taxonomy, which facilitate deeper learning (Bergmann & Sams, 2014b). Figure 1 explains how higher-order thinking skills (HOTS) and lower-order thinking skills (LOTS) are treated in the flipped classroom approach.

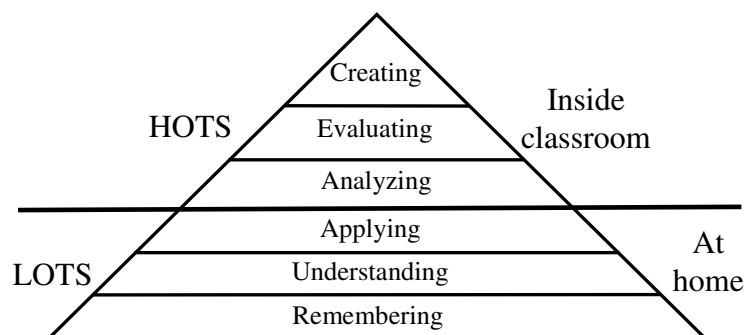


Figure 1. HOTS and LOTS in the flipped classroom

The ultimate objective in classrooms is to use higher-order thinking skills not because they are superior to facts, but because higher-order thinking skills encompass lower-order thinking skills. Besides, higher-order thinking skills train students for real-world application outside the classroom since they involve a series of related problems that contain important facts to solve instead of just a series of related facts to memorize (Conklin, 2012). In English language classrooms, language should serve as a means of developing higher-order thinking skills; students do not learn language for its own sake but in order to develop and apply their thinking skills in situations that go beyond the language (Burns & Richards, 2012). Higher-order thinking skills increase students' motivation as well as achievement. They increase students' sense of control over ideas, so thinking is much more fun than memorizing (Brookhart, 2010).

### 2.3 Engagement in English Language Classrooms:

Engagement plays a vital role in leaning a language since passive students are not capable of learning a language well. Engagement is defined as "the extent to which students are contributing to activities" (Vinson et. al, 2010:131). It is also defined as "the extent to which students are actively involved in a variety of educational activities that are likely to lead

to high quality learning" (Coates, 2005:26). Kuh (2009) states that student engagement involves a high level of participation and a high quality of effort in the learning process. For every teaching procedure, students have to access and work with it. So, teachers should offer interesting and motivating activities for students to guarantee their positive engagement. The design of the course may influence the engagement level, so flipped classrooms are supposed to be effective since students have to engage in inside and outside classroom activities. Moreover, the flipped classroom instruction helps students make their own decisions and promote students' autonomy which enables them to have a vested interest in an activity and can increase engagement (Pink, 2009).

Research that have been conducted to explore the impact of the flipped on student engagement is almost rare. One of attempts was Moran's study (2014) which assessed student engagement with the flipped model of instruction in two grade English Language Arts (ELA) classrooms. The study results indicated flipped method may be one pedagogical tool in an ELA classroom, but is not a sole means for enhancing engagement of all students. Bormann (2014) explored the effectiveness of a flipped classroom model on student engagement and achievement and the findings revealed that flipped learning could afford students a more engaging environment that could lead to higher achievement and a better preparedness for 21st-century learning. So, there is a demand to more exploration of the impact of the flipped classroom learning on student engagement.

#### *2.4 Student Satisfaction:*

Student satisfaction is the positive attitude toward the teaching and learning activities and experiences implemented in the flipped classroom. In face-to-face learning, some students are dissatisfied for many reasons. The main reason is the instructor's dominance over the classroom which causes boring and passivity of students. Another reason is the lack of interaction between students which result in isolation and unfriendly learning environment. The third reason is the large amount of duties that students have to perform in and out the classroom. The fourth one is the fear of committing mistakes inside the classroom which may prevent students from participation and questioning. The flipped classroom learning may solve the dissatisfaction causes since it concentrates on the student-centered learning which makes learning enjoyable and meaningful. Farah (2014) examined the attitudes of the twelfth grade female Emirati students in the applied technology high school toward the flipped instruction and found that students' attitudes towards the flipped instruction proved to be equally favorable. ALRowais (2014) also explored the impact of flipped learning on achievement and attitudes in higher education and concluded that there were positive effects of both the students' achievement and their attitudes towards studying courses. Moreover, Al-Zahrani's (2015) investigation of the students' views about the flipped classroom revealed that they were generally satisfied with this approach. In addition, Prefume (2015) explored the effect of a flipped classroom approach in a Japanese language classroom. The qualitative data revealed that students expressed favorable attitudes towards the flipped classroom approach. Gross et al. (2015) also examined the effectiveness of the flipped classroom model on student engagement, student satisfaction, and academic performance. The finding revealed that high levels of student engagement and course satisfaction characterized the students in the flipped courses. Besides, Hung (2015) examined the possible impacts of flipping the classroom on English language learners' academic performance, learning attitudes, and participation levels. The findings showed that the flip lessons helped the students attain better learning outcomes, developed better attitudes toward their learning experiences, and devoted more effort in the learning process. As mentioned above, student satisfaction increased when using the flipped classroom learning. This study examines student satisfaction, too, because the suggested model being used in this study is different from the previously examined flipped classroom paradigms.

#### *2.5 The Structure of the EFL Flipped Classroom Teaching Model (EFL-FCTM):*

The related literature showed some successful attempts to apply the flipped classroom learning. Ogden et al., (2014) designed a flipped classroom model for teaching algebra to college students using Joyce, Weil & Calhoun (2009) framework. Another framework was presented by Ogden & Shambaugh (2016) who used an integrated teaching model acknowledging multiple teaching approaches, including in-class cooperative learning, mentored laboratory activities, and online teaching videos for teaching algebra. As a result of the absence of flipped classroom models for teaching English as a foreign language, there is a demand for designing an EFL flipped classroom teaching model to direct EFL instructors to the practical procedures that can be implemented step by step in EFL classrooms. The EFL flipped classroom teaching model of the current study is called the "EFL Flipped Classroom Teaching Model (EFL-FCTM).

Deeper understanding of the theories underlying the flipped classroom learning should be considered in order to suggest the (EFL-FCTM). The first theory is the Blended Learning Theory (BLT) which is a pedagogical approach to instruction consisting of face-to-face, computer mediated activities, and online learning. BLT refers to the combination of multiple aspects of "teaching" and "learning"; it is the organic combination of many different teaching methods, teaching environment, teaching media and teaching elements. BLT minimizes some of the weaknesses of full online courses by allowing face time with the instructor and provides an opportunity for clarity of difficult concepts or assignments (Tong et. al, 2012; Hussey, Fleck, & Richmond, 2015). The second theory is Project-Based Learning Theory (PBLT) which is student-

centered pedagogy that focuses on a project or problem that is experienced by the students as means for instruction. It involves the solution of a problem; initiatives by the student or group of students; resulting in an end in a considerable length of time. Project-based learning is one of the most effective ways available to engage students with their learning content, and for that reason, PBL is now recommended by many educational leaders as a best instructional practice. PBL provides students with the opportunity to solve real-world problems. The teacher is often viewed as a facilitator who works side-by-side with students to assist in framing questions and structuring authentic and meaningful tasks while providing critical feedback to the students (Bender, 2012; Hussey et al., 2015). The third theory is the Cognitive Taxonomy Theory (CTT) that emphasizes the Bloom's modified cognitive domains which are hierarchical in nature and start with remembering (the lowest level) and end with creating (the highest level). CTT is a logical fit to understanding the research on flipped classrooms, as there CTT elements in the flipped classroom format. Bloom's taxonomy is a useful tool for classifying the level of cognitive demand of intended learning outcomes. It is contended that every classroom teacher should be proficient in employing such a taxonomy for unpacking his or her curriculum (Gareis & Grant, 2015; Hussey et al., 2015). The fourth theory is the constructivist active learning in which students' questions are highly valued and students are viewed as thinkers and primarily work in groups. Students learn more when they take responsibility for their own learning. Constructivist theory views learning not as sequential and linear, but integrated and complex. Learning is a process that engages the learner in sense-making activities shaped by prior knowledge. Activities are structured so learners create and control the development of their own learning from beginning to end (Foote, Vermette & Battaglia, 2013; Keengwe et al., 2014). The fifth one is student-centered learning in which learning is transformed into a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter. Without these activities, the flipped classroom simply does not exist, so the flipped classroom is a suitable approach for a multidisciplinary collaborative learning environment (Mathews, 2015). The last one is the social interdependence theory (SIT) that its premise is how participants' goals are structured to determine how they interact and the interaction pattern determines the outcomes of the situation. Cooperation tends to induce and be induced by mutual assistance, exchange of needed resources, and trust. Positive social interdependence among students occurs when group members cooperate to achieve a common goal. Students who develop positive social interdependence have higher self-esteem, better social skills, and higher grades. Positive social interdependence can be promoted by using cooperative learning strategies and the flipped classroom may be a suitable environment to promote students' positive social interdependence (Ainsworth, 2013; Johnson & Johnson, 2011).

The suggested (EFL-FCTM) has four phases beginning from out-classroom activities and ending with assessment as seen in Figure 2. These phases are as follows:

*Phase One:* The lesson to be flipped is chosen by the instructor; not all lessons can be flipped. The instructor begins to determine the learning outcomes of the lesson. The learning outcomes are divided into lower-order thinking skills (LOTS) which include (remembering, understanding and applying) and higher-order thinking skills (HOTS) which include (analyzing, evaluating and creating). LOTS are stated to be achieved outside the classroom and HOTS should be achieved in class.

*Phase Two:* The instructor designs the content through videos, audios, reading materials and/or by any means, and delivers it to the students before the next class. He should take in consideration that the content covers the lower-order thinking skills. At home, students watch the videos, reads the materials, listens to the audios and the other materials assigned by the instructor. They have to remember the information provided, understand the lesson ideas and analyze the content provided.

*Phase Three:* Inside the classroom, students are engaged in active learning activities, discussions, collaborative learning, critical thinking skills and so on. Besides, pair and group work are implemented to encourage students participation and engagement. Most of the class time is devoted for student-centered learning. The instructor role is a facilitator and supporter of learning; he encourages students to participate and controls the activities been implemented.

*Phase Four:* At the end of the lesson, students have to do projects, presentations and assignments related to the lesson. These activities are evaluated by the instructor to make sure that the learning outcomes are achieved. Finally, every step of the model is evaluated to give a feedback for the whole lesson.

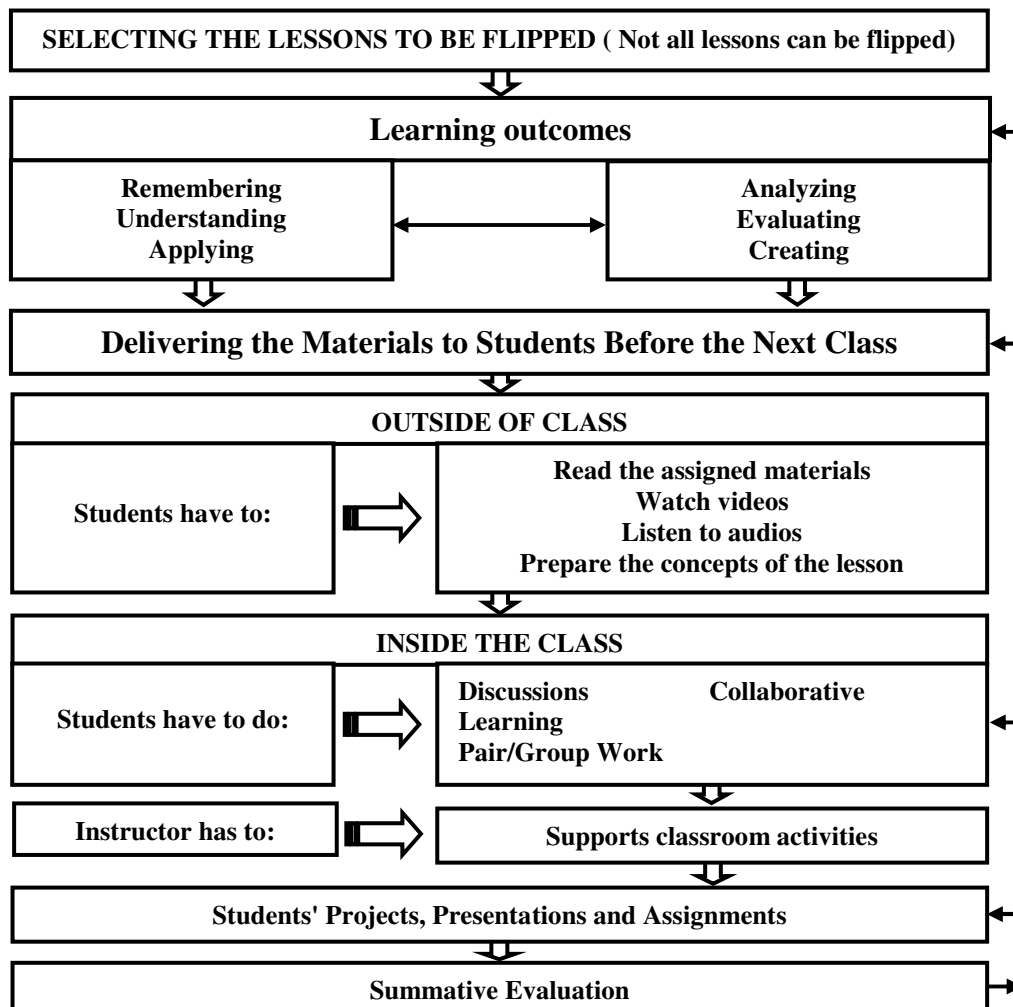


Figure 2. The EFL Flipped Classroom Teaching Model (EFL-FCTM)

### 3. Methodology:

#### 3.1 Research Design

The study employed the quasi-experimental approach to examine the impact of the (EFL-FCTM) on students' higher-order thinking skills, engagement and satisfaction. The participants were assigned into one of the two groups: the experimental and the control groups. A pretest in higher-order thinking skills was administered to both groups to measure students skills before the intervention. The same test was administered as posttest to both groups at the end of the study to measure the differences between the study groups. The study also employed the descriptive approach. A questionnaire was administered to the experimental group only to assess the differences between student engagement before and after the intervention. Another questionnaire was also administered to evaluate the experimental group students' satisfaction of the EFL-FCTM after the intervention. Figure 3 explains the design of the study:

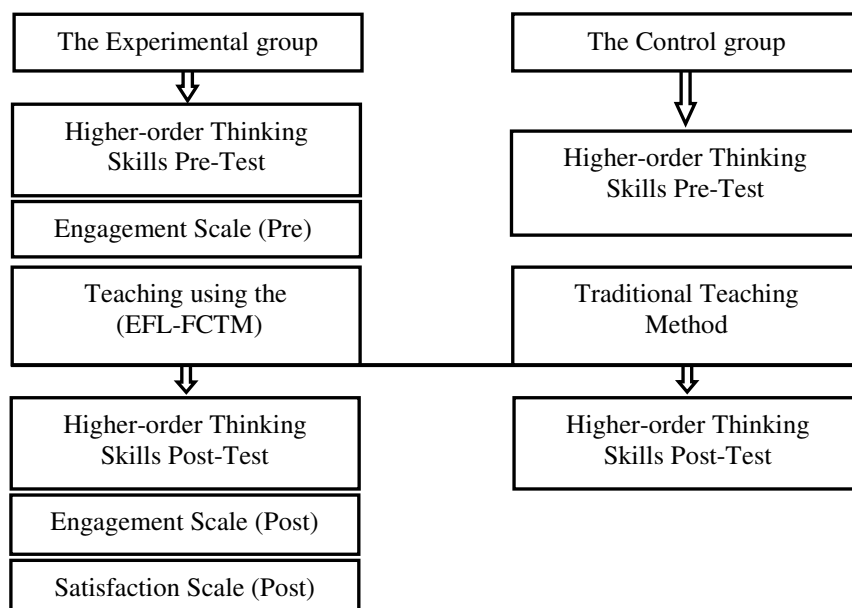


Figure3. Study Design

### 3.2 Participants

This study was conducted during the second semester of the 2014/2015 academic year at Taif University in Saudi Arabia. The sample comprised (67) female students representing two classes. They were assigned randomly into an experiment group (n=33) and a control group (n=34). They were graduate students studying a general English language course. Their native language is Arabic and they were almost of the same age and English language proficiency as measured by the pretest. They were taught by the same instructor; the experimental group received the EFL-FCTM instruction, whereas the control group adopted the usual instruction.

### 3.3 The treatment

To investigate the impact of the (EFL-FCTM) on students' higher-order thinking skills (HOTS), engagement and satisfaction, five units of the general English Language course were chosen. The control group were taught using the traditional way of teaching, while the experimental group taught using the (EFL-FCTM). Both groups were taught by the researcher. The treatment lasted ten weeks; two lectures (100 minutes) a week. Before the treatment, the treatment group students were given the instructions that should be followed in the next ten weeks. The content of each lesson was designed through PowerPoint presentations, short videos, websites, audios and/or reading materials of the assigned lesson. Four days before each class, the content was delivered to students via the university BLACKBOARD. Students had to study the content and answer few given questions related to remembering, understanding and analyzing and send their answers two days before the class to be checked and evaluated. The class time then was divided into three parts: the first part (20 minutes) was devoted to revising students' answers and giving the correct feedback. The second part (60 minutes) was the core of the class; planned activities were given for each of the higher-order thinking skills. Students worked in pairs or groups to discuss the ideas or problems given, After each activity, a feedback was given to ensure students' understanding. The third part (20 minutes) was allocated to revise the whole learning outcomes and to summarize the main points of the lesson. Students had to raise their questions and write a short summary about the lesson.

### 3.4 Instruments

Since the study aimed to explore the impact of EFL-FCTM on students' higher-order thinking skills, student engagement and satisfaction, the researcher designed three different tools, namely; Higher-order Thinking Skills Test, Student Engagement Scale and Satisfaction Scale.

#### 3.4.1 Higher-order Thinking Skills (HOTS) Test

The higher-order thinking skills test aimed to assess students thinking skills in (analyzing, evaluating and creating). The content taught to the experimental and control groups included five units (units 1-5) and the experiment lasted 10 weeks (20 hours). The content was analyzed according to the revised Bloom's taxonomy and only the higher-order thinking skills were chosen. The content was analyzed to design the table of specification to make sure that the questions covered all the lessons and the higher-order thinking skills. The content analysis was repeated and it was reliable. 26 questions were formed divided on three levels; (analyzing (11 items), evaluating (9 items) and creating (6 items)). The items were revised by some

experts in language teaching and assessment. The experts provided some modifications and the final test had 20 questions; (analyzing (8 items), evaluating (7 items) and creating (5 items)). The HOTS test adapted the multiple choice questions for analyzing and evaluating skills; each question had four distracters (A, B, C and D); only one answer was correct, and one point was given to the correct answer and zero for the false one. The creating part was open-ended questions that assessed students ability to create new ideas. The test was administered to a pilot group (28 students) to verify its reliability, difficulty coefficients and discrimination coefficients. The test was reliable (Cronbach's  $\alpha = 0.81$ ); the difficulty coefficients ranged from (0.35 to 0.54), and the discrimination coefficients ranged from (0.59 to 0.76).

### 3.4.2 Students Engagement Scale

There are many instruments that measure student engagement (Gunuc & Kuzu, 2015; Uğur & Akin, 2015). A number of studies that dealt with engagement were reviewed (Chi, 2014; Fredricks & McColskey, 2012; Johnson, 2013; Shermila, 2015). A 19-item, five-point Likert questionnaire, ranging from (strongly disagree to strongly agree) was designed and distributed (Appendix A) to the experimental group to measure student engagement. It was reviewed by a number of experts in language teaching and assessment to examine its validity and some modifications were undertaken. The questionnaire reliability was verified and it was (0.86).

### 3.4.3 Satisfaction Scale

To explore student satisfaction with the flipped classroom teaching model (EFL-FCTM), a questionnaire was designed for this purpose depending on the previous research on satisfaction (Hung, 2015; Johnson, 2013; Yordchim & Gibbs, 2014). The questionnaire contained 16-five-point Likert items, ranging from (strongly disagree to strongly agree) (Appendix B). It was reviewed by a number of experts in language teaching and assessment to examine its validity and some modifications were carried out. The questionnaire reliability was examined using Cronbach's  $\alpha$  (0.81). It was administered to the experimental group students only after the intervention.

### 3.5 Data Collection Procedure

Before the treatment, the higher-order thinking skills (HOTS) test was administered to the experimental and control group to make sure that the two groups were equivalent. The test time was 30 minutes and students had to write their names and class and choose only one answer for questions (1-15), and write the answer for questions (16-20). The total grade for analyzing was (8) points, evaluating (7) points, creating (5) points and the total grade was (20) points. Table 1 shows the result of the independent sample T-test for the pre administration of the HOTS test:

Table 1. The result of pre-administration of HOTS test

HOTS	Group	N	Mean	Std. Deviation	t	df	Sig.																																
Analyzing	Experimental	33	2.909	.72	.139	65	.890																																
	Control	34	2.884	.84				Evaluating	Experimental	33	2.545	.79	-1.169	65	.247	Control	34	2.764	.74	Creating	Experimental	33	2.060	.34	.771	65	.444	Control	34	1.970	.57	Total	Experimental	33	7.515	1.62	-.233	65	.816
Evaluating	Experimental	33	2.545	.79	-1.169	65	.247																																
	Control	34	2.764	.74				Creating	Experimental	33	2.060	.34	.771	65	.444	Control	34	1.970	.57	Total	Experimental	33	7.515	1.62	-.233	65	.816	Control	34	7.617	1.95								
Creating	Experimental	33	2.060	.34	.771	65	.444																																
	Control	34	1.970	.57				Total	Experimental	33	7.515	1.62	-.233	65	.816	Control	34	7.617	1.95																				
Total	Experimental	33	7.515	1.62	-.233	65	.816																																
	Control	34	7.617	1.95																																			

As seen in Table 1, there were no statistically significant differences between the mean scores of the two groups in the HOTS test; analyzing ( $t=.139$ ), evaluating ( $t=-1.169$ ), creating ( $t=.771$ ) and the total grade ( $t=-.233$ ) which meant that the two groups were equivalent.

In addition, the student engagement scale was administered to the experimental group only before the treatment to calculate their engagement level. The scale had 19 items and students had to choose one of the responses (strongly agree, agree, neutral, disagree and strongly disagree).

After the treatment, the higher-order thinking skills (HOTS) test was administered to the experimental and control group to examine the impact of the (EFL-FCTM) on students' higher-order thinking skills. In addition, the student engagement scale was also administered to the experimental group only to explore the impact of the (EFL-FCTM) on the experimental group students. Finally, the satisfaction scale was administered to the experimental group only after the treatment to examine their satisfaction with the model. The scale had 16 items and students had to choose one of the responses (strongly agree, agree, neutral, disagree and strongly disagree). The degree of satisfaction was as follow: from (1 to



less than 1.8) very low, (1.8 to less than 2.6) low, (2.6 to less than 3.4) moderate, (3.4 to less than 4.2) high, and (4.2 to 5) very high.

#### 4. Results and Discussion

To investigate the impact of the (EFL-FCTM) on students' higher-order thinking skills (HOTS), the independent sample T-test for the post-administration of the HOTS test was calculated as shown in Table 2:

Table 2. The result of post-administration of HOTS test for the study groups

HOTS	Group	N	Mean	Std. Deviation	t	df	Sig.	Effect size
Analyzing	Experimental	33	7.288	.51	13.106	65	.000	.85
	Control	34	5.676	.49				
Evaluating	Experimental	33	6.318	.44	11.766	65	.000	.83
	Control	34	4.956	.49				
Creating	Experimental	33	4.803	.39	8.212	65	.000	.71
	Control	34	3.868	.52				
Total	Experimental	33	18.394	1.19	11.909	65	.000	.83
	Control	34	14.500	1.46				

As seen in Table 2, there were statistically significant differences between the mean scores of the two groups in the HOTS test; analyzing ( $t=13.106$ ,  $Sig.<.001$ ), evaluating ( $t=11.766$ ,  $Sig.<.001$ ), creating ( $t=8.212$ ,  $Sig.<.001$ ) and the total grade ( $t=11.909$ ,  $Sig.<.001$ ) in favor of the experimental group; which meant that the experimental group outperformed the control group significantly at ( $Sig.<.001$ ). The effect size of the (EFL-FCTM) was high for all the four domains; it was (.85) for analyzing, (.83) for evaluating, (.71) for creating and (.83) for the whole test.

This finding agreed with ALRowais (2014) which examined the impact of flipped learning on achievement in higher education and revealed significant differences between the two groups in favor of the experimental group. It also went in accordance with the study of Obari & Lambacher (2015) which evaluated the effectiveness of a flipped classroom on students' English language proficiency of 60 first-year and 25 third-year undergraduates. The results showed that the flipped lessons were more effective in improving students' TOEIC scores, English oral proficiency and the students' overall English skills. Besides, the finding of this study was consistent with that of Engin's (2014) which revealed that the flipped classroom learning improved students' writing and language skills.

These findings confirmed that the flipped classroom teaching model was effective in language learning. The outclass activities gave students the chance to review the lesson and had a clear idea about the content. Also, students spent adequate time to learn the lower-order thinking skills in their pace, and were able to write their notes and comments regarding the lesson. In the classroom, the revision of the lower-order thinking skills supported their learning. Activities controlled by the instructor such as discussions, critical thinking, pair work, group work, etc. gave the chance to promote student-centered learning which represented the core of the flipped classroom learning.

To examine the impact of the (EFL-FCTM) on student engagement, the data obtained from the pre and post administration of the engagement questionnaire administered to the experimental group only were calculated using paired samples T-test. Table 3 showed the result of this comparison:

Table 3. The difference between pre and post-administration of the engagement scale

	Treatment	N	Mean	Std. Deviation	t	df	Sig.	Effect size
Engagement	Pre	33	3.070	.46	-18.626	32	.000	.91
	Post	33	4.030	.47				

As seen in Table 3, there was statistically significant difference between the mean scores of the pre and post-administration of the engagement scale in favor of the post administration (Pre:  $M=3.070$ ,  $SD=.46$ ; Post:  $M=4.030$ ,  $SD=.47$ ;  $t=-18.626$ ,  $Sig.<.001$ ), which meant that the using of the (EFL-FCTM) was effective in improving student engagement. The effect size of the (EFL-FCTM) on student engagement was high (.91). The findings this study agreed with Obari & Lambacher (2015) which indicated that students were engaged in the flipped classroom lessons which offered a rich, informal, contextual, and ubiquitous learning environment in which it was possible for students to control their learning time, environment and speed. It was consistent with the findings of Evseeva & Solozhenko (2015) which indicated that 85% of

students taking part in the study liked the idea of integrating the flipped classroom technology into the learning process. Besides, it agreed partially with the findings of Moran's (2014) which revealed that highly motivated students who felt they were able to navigate the flipped unit easily, while other students with less success found the self-paced nature of flipping to be frustrating and this might be due to the age of participants (7<sup>th</sup> grade).

The (EFL-FCTM) was more engaging than the traditional instruction and gave greater opportunities for communication. It motivated students to learn the language and encouraged them through various untraditional activities being implemented. Also, the flipped instruction gave students a chance to control their learning using a number of activities that promoted student-centered learning. Moreover, it promoted self-learning; students asked themselves to make sure they knew the materials well and understood what the lesson was about.

To explore student satisfaction on using the (EFL-FCTM), means and standard deviations were calculated for the 16 items of the satisfaction scale as seen in Table 4:

Table 4. The mean scores and standard deviation of the satisfaction scale

No	Items	Mean	Std. Deviation
1	The flipped learning responses to purposes, objectives, learning activities of the course.	4.12	.81
2	The flipped learning helps to contribute my language learning.	4.15	.90
3	The flipped classroom has suitable tools for supporting my learning.	4.18	.88
4	The flipped learning encourages me to have creative thinking and evaluation	4.36	.74
5	I am satisfied with the content and topics of the learning materials.	4.24	.75
6	I am satisfied with the format and structure of the learning materials.	4.06	.78
7	I am satisfied with the integration of technology and multimedia resources.	4.21	.69
8	I am satisfied with the control and freedom of choosing what and how to learn.	4.18	.88
9	The flipped learning gives control over my study.	4.12	.81
10	The use of the flipped learning reduces the feeling of boring and tension.	4.18	.84
11	The flipped learning can be used in the field of English language learning in the future.	4.15	.75
12	The use of the flipped classroom is easy and applicable.	4.12	.64
13	The use of the flipped learning helps me to develop useful skills.	4.06	1.11
14	The flipped learning reduces time required to learn.	4.00	.86
15	I enjoy learning the English language through the use of the flipped learning.	4.06	.86
16	Overall, I am satisfied with the flipped classroom learning experience.	4.09	.87
Overall Mean		4.14	.49

The overall mean score of student satisfaction was (M=4.14, SD=.49). All items were high, ranging from (4.00 to 4.36). Students were most satisfied with the flipped instruction which encouraged them to have creative thinking and evaluation (M=4.36), the content and topics of the learning materials (M=4.24), the integration of technology and multimedia resources (M=4.21), the availability of suitable tools for supporting learning (M=4.18), the control and freedom of choosing what and how to learn (M=4.18) and the reduction of feeling of boring and tension in the flipped classroom (M=4.18). These findings confirmed the previous research which revealed that students in general were satisfied with the flipped instruction (ALRowais, 2014; Basal, 2015; Mehring, 2014; Obari & Lambacher, 2015).

The findings of the student satisfaction confirmed the importance of shifting from traditional teaching methods to more effective teaching paradigms such as the flipped instructions which involved students in the learning processes. Student satisfaction was a very important aspect of learning the language because it pushed students forward to participate, engage and have a meaningful learning. It also decreased the instructor' duties in teaching since students were ready psychologically and physically to practice learning. So, successful learning needed more satisfied students, and satisfied students always be good learners.

To explore whether there were significant relationships between students' higher-order thinking skills, engagement and satisfaction, Pearson correlation coefficient was used as illustrated in Table 5:

Table 5. The Relationships between HOTS, engagement and satisfaction (n=33)

Variables		HOTS	Engagement	Satisfaction
HOTS	Pearson Correlation	1		
	Sig.			
Engagement	Pearson Correlation	.843**	1	
	Sig.	.000		
Satisfaction	Pearson Correlation	.703**	.740**	1
	Sig.	.000	.000	

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 5 showed that there was statistically significant high positive relationship between the higher-order thinking skills and student engagement ( $r=.843$ ). Also, there was statistically significant high positive relationship between the higher-order thinking skills and student satisfaction ( $r=.703$ ). Moreover, there was statistically significant high positive relationship between student engagement and satisfaction ( $r=.740$ ). These findings partially agreed with that of Jamaludin et. al (2016). The findings proved that the flipped instruction increased student engagement and satisfaction and they were significantly related. When students engaged in classroom they achieved high grades in HOTS. Also, their satisfaction on the flipped instruction increased their engagement and HOTS.

## 5. Conclusion and Implications

The flipped classroom provides a new methodology for teaching and learning that changes the roles of instructors from front-of-the-class to a more cooperative and collaborative contribution to the teaching process (Du et al., 2014). The findings of this study reveal that flipped model (EFL-FCTM) is effective in increasing students' foreign language higher-order thinking skills, engagement and satisfaction. The current study shows that students prefer to be in the center of the educational process. They are satisfied with the idea of changing the traditional practices to a more autonomous learning that fulfills their needs and incorporates new technology in classroom. There is a clear evidence that student engagement is derived from the way teaching is carried out.

Schools' administrators should encourage teachers to reduce face-to-face learning and pay more efforts in adapting new teaching approaches such as technology-integrated learning, flipped instruction and student-centered learning. They have to create rich environments that motivate students to control their leaning time, ways of learning and take responsibilities of their learning. Instructors have to engage students in learning situations that enhance their experiences. Still, there are some challenges to be overcome including the integration of technology in foreign language classrooms.

It is important to conduct more studies in experimenting new flipped classroom teaching models for the language skills; listening, speaking, reading, writing, vocabulary and grammar because the general models may be not convenient for all skills. Further research should examine different aspects that may be contributed to the success of flipped instruction in language learning, such as students' aptitude, learning styles, cognitive and metacognitive strategies. There is a demand to apply this model, (EFL-FCTM), in different environments and to students of different stages; intermediate and higher stages.

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## Appendix A

### Student Engagement Questionnaire

No.	Items	Responses				
		5	4	3	2	1
1	The flipped classroom is more engaging than traditional classroom instruction.					
2	The flipped classroom gives me greater opportunities to communicate with other students.					
3	I feel that flipped classroom has improved my understanding.					
4	I am more motivated to learn English in the flipped classroom.					
5	When I am in class, I listen very carefully.					
6	When I am in class, I act like I am working.					
7	I enjoy learning new things in class.					
8	When we work on something in class, I feel encouraged.					
9	I outline the chapters in my book to help me study.					
10	I ask myself questions to make sure I know the material that I have been studying.					
11	Before I start a project, I plan out how I am going to do it.					
12	When I have a project to do, I worry a lot about it.					
13	I pay attention in class.					
14	I am interested in working in class.					
15	When I read the lesson, I ask myself questions to make sure I understand what it is about.					
16	The tests in my class do a good job of measuring what I am able to do.					
17	In my class, I do more than required.					
18	I enjoy discussing topics with my peers.					
19	The class makes me want to learn more about the topic.					

## Appendix B

### Satisfaction Questionnaire

No.	Items	Responses				
		5	4	3	2	1
1	The flipped learning responses to purposes, objectives, learning activities of the course.					
2	The flipped learning helps to contribute my language learning.					
3	The flipped classroom has suitable tools for supporting my learning.					
4	The flipped learning encourages me to have creative thinking and evaluation					
5	I am satisfied with the content and topics of the learning materials.					
6	I am satisfied with the format and structure of the learning materials.					
7	I am satisfied with the integration of technology and multimedia resources.					
8	I am satisfied with the control and freedom of choosing what and how to learn.					
9	The flipped learning gives control over my study.					
10	The use of the flipped learning reduces the feeling of boring and tension.					
11	The flipped learning can be used in the field of English language learning in the future.					
12	The use of the flipped classroom is easy and applicable.					
13	The use of the flipped learning helps me to develop useful skills.					
14	The flipped learning reduces time required to learn.					
15	I enjoy learning the English language through the use of the flipped learning.					
16	Overall, I am satisfied with the flipped classroom learning experience.					