

Proposal for Implementing the Flipped Learning Method in Dentistry English

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## PROPOSAL FOR IMPLEMENTING FLIPPED LEARNING

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**Abstract**

In traditional teaching, the information is given to the students in the class by the lecturer through different sources. The digestion of the information is done by the students at home. Therefore, the time that is allocated for the production and the practice of the taught subject becomes limited. Yes, "flipped learning" changes that totally. The idea behind it is schoolwork at home and homework in class. This study seeks to find out what flipped learning contributes to learning and how it deals with boosting the students' autonomy. In the flipped learning way of teaching, students are supposed to take the initiative for their learning. When they come to class with the information they watched and studied at home, they will be able to produce and practice. If the students do not take the responsibility, the system will likely to collapse. In this paper, I investigate how I can transform my Dentistry English class from its current traditional format into a more dynamic flipped classroom that energizes the students, endows them with a greater sense of responsibility and help them maintain their enthusiasm for the whole year.

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**ERIC Descriptors**

Flipped Learning

Flipped Classroom

Dentistry English

ESP



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## Introduction

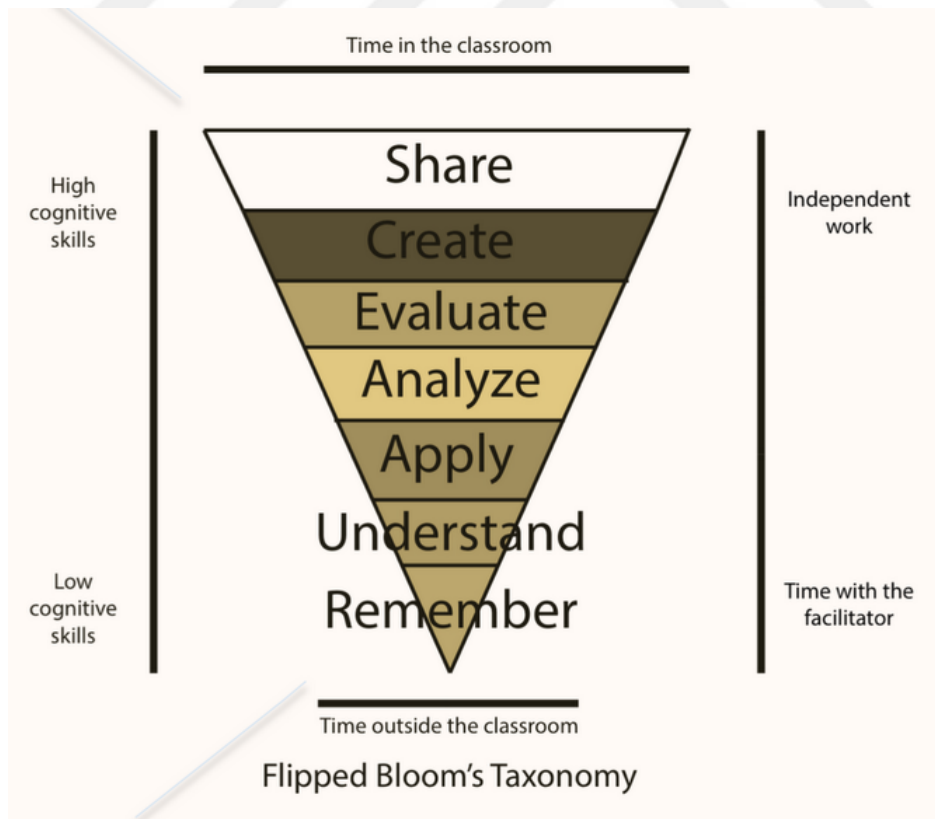
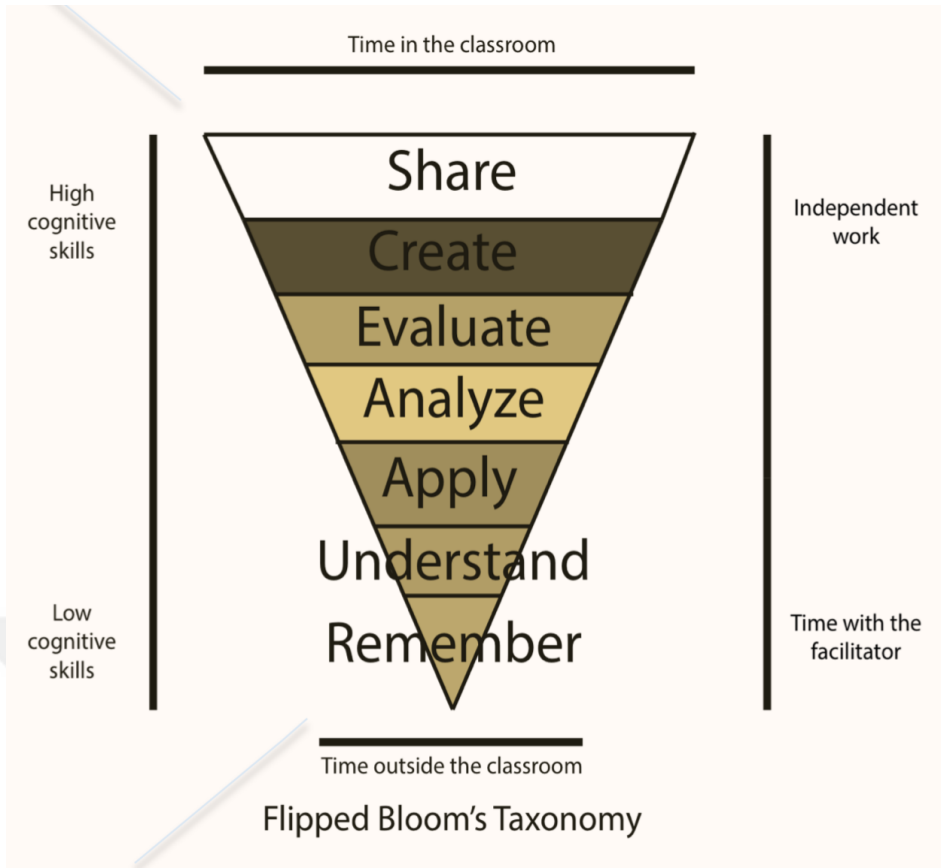
### What is Flipped Learning?

“Flipped learning is a pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and resulting group space is transformed into a dynamic, interactive learning environment where the educator guides the students as they apply concepts and engage creatively in the subject matter.” (Flipped Learning Network, 2014)

According to Compton (2016), Flipped Learning has four pillars, following the acronym FLIP: (1) flexible environment “where students choose when and where to learn”; (2) learning culture in which “students are actively involved in knowledge construction”; (3) intentional content “in which students develop conceptual understanding”; (4) and professional educator who is “less visibly prominent (but remains) the essential ingredient that enables Flipped Learning to occur.” (p. 2)

As reported in Flipped Learning Handbook, the flipped classroom and traditional teaching methods markedly differ from each other. One of the main differences is that in the conventional learning methods, students are supposed to perform high cognitive skills such as creating, evaluating, analyzing and applying on their own and low skills such as applying, understanding and remembering in the classroom whereas in the flipped learning students do the exact opposite. The students are expected to complete the low-level cognitive skills before they come to class through learning management system and the high-level cognitive skills in the classroom with the instructors as their guide, not a lecturer. To envision the differences between a teacher-centered class and a flipped learning class, Bloom’s Taxonomy’s can help understanding.

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### **Background**

The dentistry department of the Bezmialem Foundation University provides mandatory dental English classes for the first and second year students. Although the students were required to take another dental English class in the third year in 2017, the university decided to remove the class due to the complaints from the students. The reasons for the dissatisfaction of the class were mostly related to their intense schedule, and their belief that the lesson was non-essential. Additionally, the students reported that they didn't enjoy the classes. The students still do not see dental English as one of their priorities. The main reason is that a high majority of the students plan to practice their profession in Turkey, and they believe that the level of English they have is sufficient to enable them to interact with any foreign patients.

Since thirty percent of the dentistry department of the university is English, the students are required to have a high level of both written and spoken English. They are either expected to prove their English Level by providing the university with the TOEFL or IELTS score, or they need to enroll in the preparatory school. Therefore, the classes are filled with a very small number of students who have a very good level of English and a high majority of students who had to finish a year-long preparatory program who tend to have a lower level of receptive and production skills. Unfortunately, the English level is not homogeneous. That is why the instructors are asked to simplify the language they use in class and in the PowerPoints and handouts they prepare.

In the current state of things, the students are demotivated and have little to know time to put what they have learned into practice. I believe that the flipped learning approach can help reinvigorate the dental English program.



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### **Rationale**

According to Ekmekci (2017), flipped learning gives the instructor class time for hands-on activities and production as opposed to traditional learning where the students are passive, and the instructor is the key factor. With flipped learning, students can have the opportunity to individualize their learning, and get feedback on the spot.

The dentistry students in this private university have been exposed to teacher-centered learning method. In this method, they do not integrate with their classmates or with their instructors and they are not given any communicative tools to use, they only do low-cognitive tasks which focus on remembering and understanding. Therefore, flipping the dental English classes can completely change the way they have been taught and can give them an effective and collaborative learning environment.

## Literature Review

### The effectiveness of Flipped Learning

Kim, Jung, Siqueira and Huber (2016) pointed out that critical thinking, interpersonal skills, and the ability to think logically are not implemented enough among the students in higher education institutions in the United States. Instead of enabling the students to acquire skills and practice them, they suffer from demotivation, distraction, and disconnection.

Stuart and Rutherford (as cited in Kim, Jung, Siqueira and Huber, 2016) stated that even though learning through online has come into view in the last twenty years, there hasn't been a dramatic change in teaching. Face-to face-lectures still predominate in most of the classrooms. Additionally, Stuart and Rutherford's research shows that the average attention span for a student cannot be prolonged for more than 20 minutes. Otherwise, it is highly likely that students might well lose their interest in learning.

According to Kim, Jung, Siqueira, and Huber (2016), the flipped classroom can foster learning by eliminating the issues mentioned above. The flipped classroom enables the students to be involved in engaging activities such as discussions, projects or problem solving.

There are various views on the benefits and drawbacks of Flipped Learning. According to Kvashnina and Martynko (2016), when online tools of the flipped learning do the teaching job through video lectures, students have more opportunities to work on their cognitive skills through engaging activities in class.

An experiment was conducted at the Tomsk Polytechnic University within the course of English for Engineering with second-year undergraduate students. Before the experiment, the course was organized based on four separate concepts. The first was that knowledge was supposed to be given to the students before the class through the use of technological tools.

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The students were exposed to some presentations, podcasts or short videos. Some basic words were highlighted or put in bold in order to get the students' attention. The second was on how to encourage the students to do the work prior the class. Considering that grades are the students' motivation, the students were informed that the work done before class would be worth the most points. Additionally, the students were given graded tests or quizzes to check their comprehension related to the pre-class work. The third query was to find a way to check the students' comprehension, and the last one was to design a course in which the students were able to work on their production, evaluation and analyzing skills. Based on the experiment, some benefits were brought forth. Through the questionnaires and interviews, students stated that they were satisfied with the effectiveness of flipped learning in terms of: coming up with their own learning system, keeping track of their own pace, and coming prepared to class. It also mentioned that the students attained autonomous learning skills and boosted their confidence. The students realized that they could come up with their own learning methods before the class, and "use their learning styles and strategies when dealing with the course content before the class and to use classroom time for more engaging and productive activities. Moreover, being able to work at their own pace and being exposed to a variety of supportive materials and instructions students with a lower level of English feel more confident and prepared when they come to the traditional class." (Kvashnina, Martynko, 2015, p. 73) The results of the study also proved that the students scored twenty-eight percent higher on the test that checked their four skills. The results of the study came to the conclusion that the students' achievement and enthusiasm increased. Additionally, the students learned and enhanced their independent learning skills. The findings are much alike with the two other experiments that were done in two different universities.

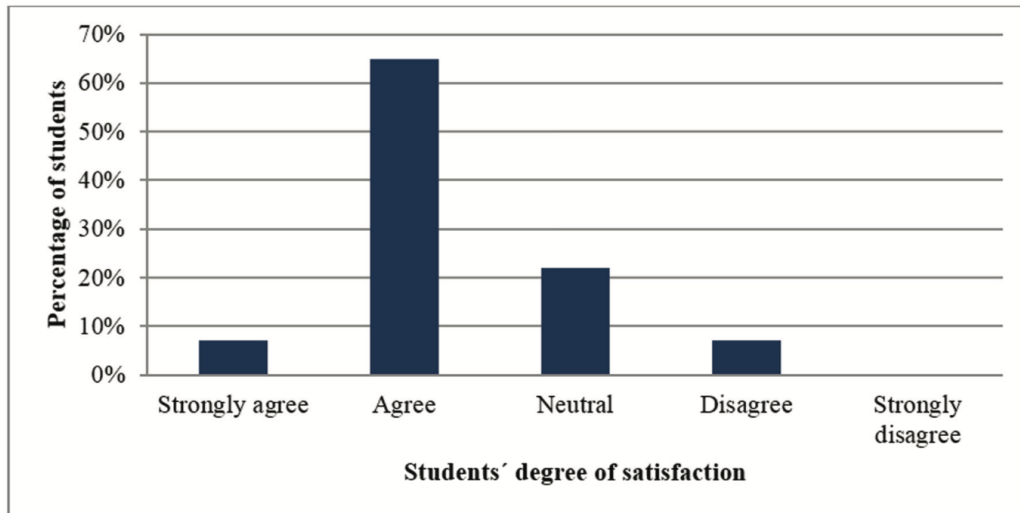
In the Faculty of Business and Economics at the University Oviedo, during 2013-2014, a flipped learning class was piloted with sixty-three students (Nanclares and Rodriguez, 2015).

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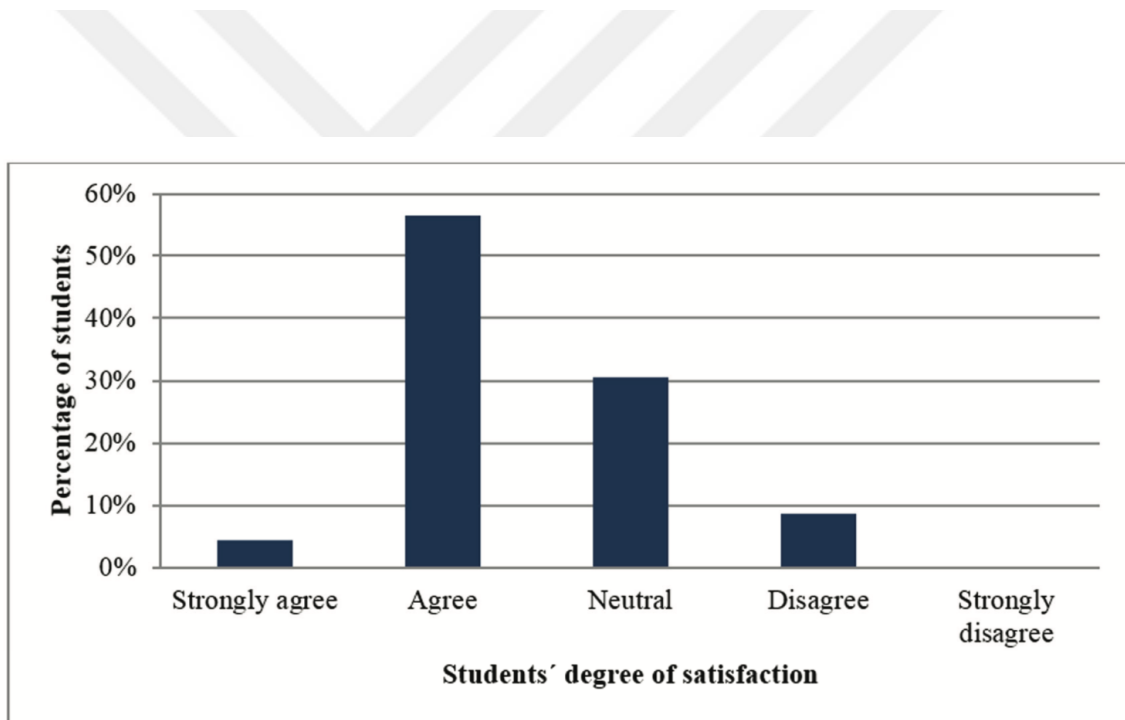
The purpose of the study was to judge the effectiveness of the flipped learning method and what the role it plays in increasing the students' motivation. Based on the results of the questionnaires, students indicated a high percentage of agreement with the stimulating environment. The students stated that the flipped learning environment was a more thought-provoking and captivating. It increased their level of encouragement towards learning new things. It is also mentioned " sixty five percent agreed that the flipped classroom is more engaging than traditional classroom instruction." (Nanclares and Rodriguez, 2015, p.4)

Additionally, they were given more opportunities for communicative and collaborative work with their classmates. It was observed that students were more willing to connect with each other and were more enthusiastic to learn. The students stated they were a lot more motivated and felt more eager to learn new subjects compared to the traditional teacher-centered education. The collaboration environment that the flipped model provides gave the students more chance and time to practice and produce together in class. Having technological tools as part of the learning boosted the students' encouragement towards learning. A great number of the students enjoyed watching the video lectures and did their assignments regularly. The eagerness of learning through technology was boosted by Flipped Learning. On top of that, having activities that required high cognitive skills augmented their learning. The graphic results of the study can be seen below. As shown in

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**Figure 1:** The “Flipped Classroom” is more engaging than traditional classroom instruction. Source: Own elaboration.



**Figure 3:** I am more motivated to learn course topics in the “Flipped Classroom.” Source: Own elaboration.

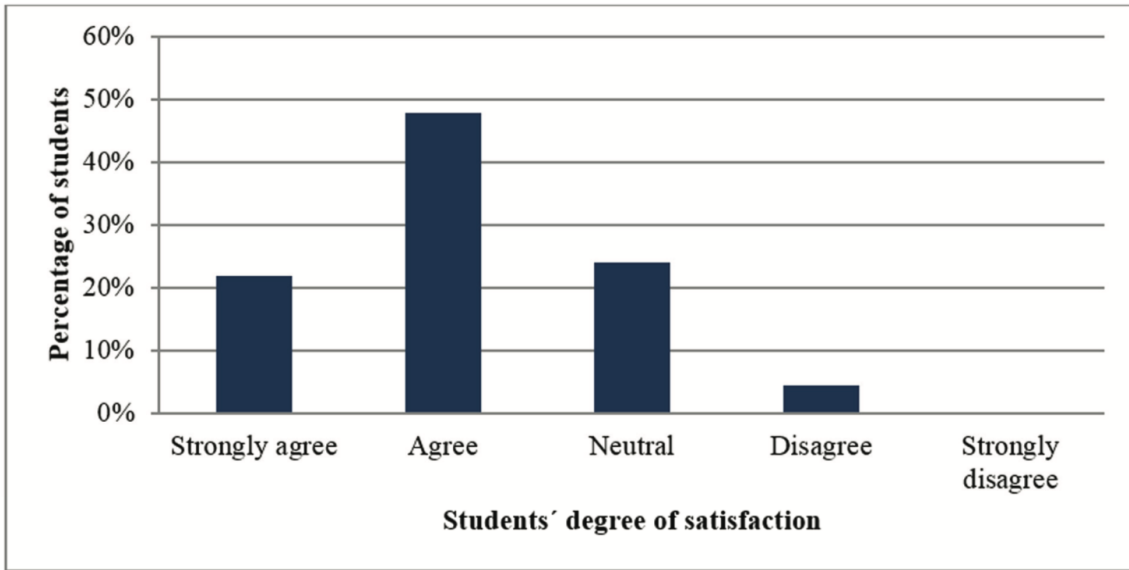


Figure 4: I like watching the lessons on video. Source: Own elaboration.

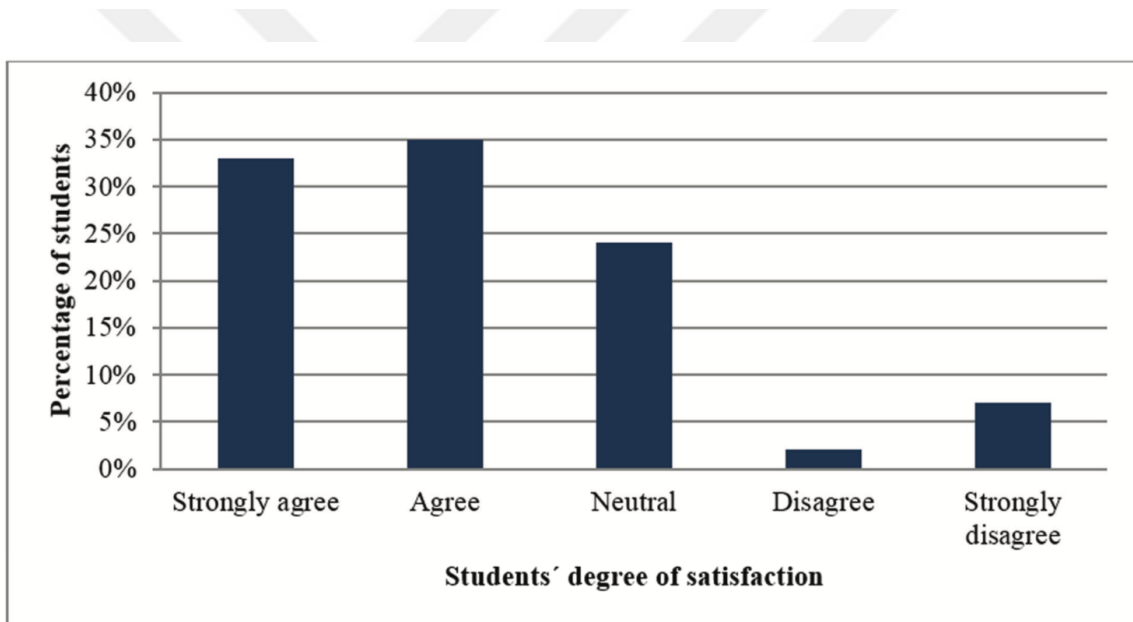
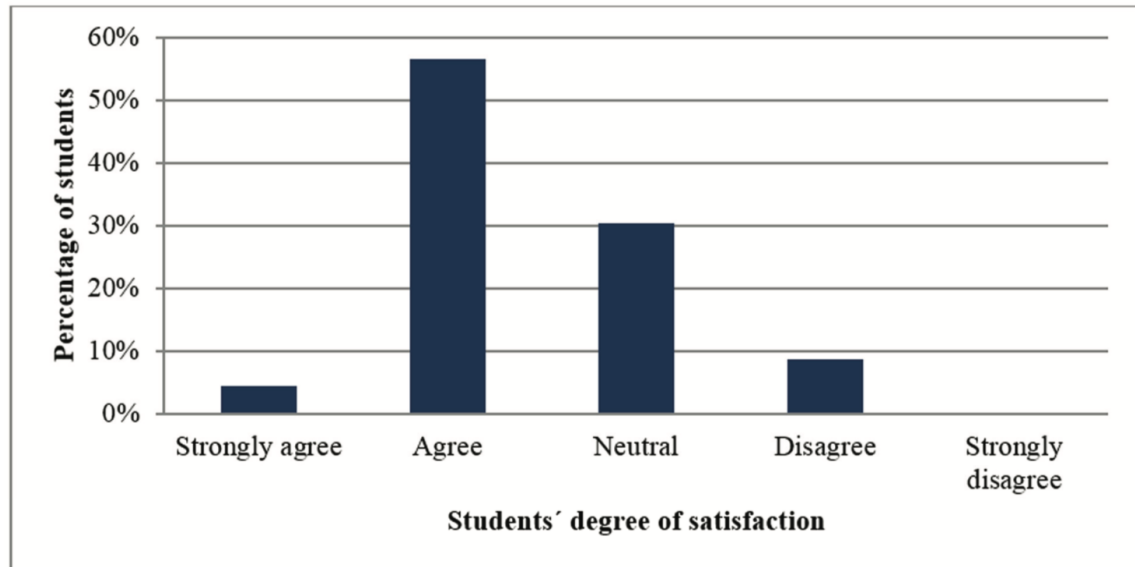
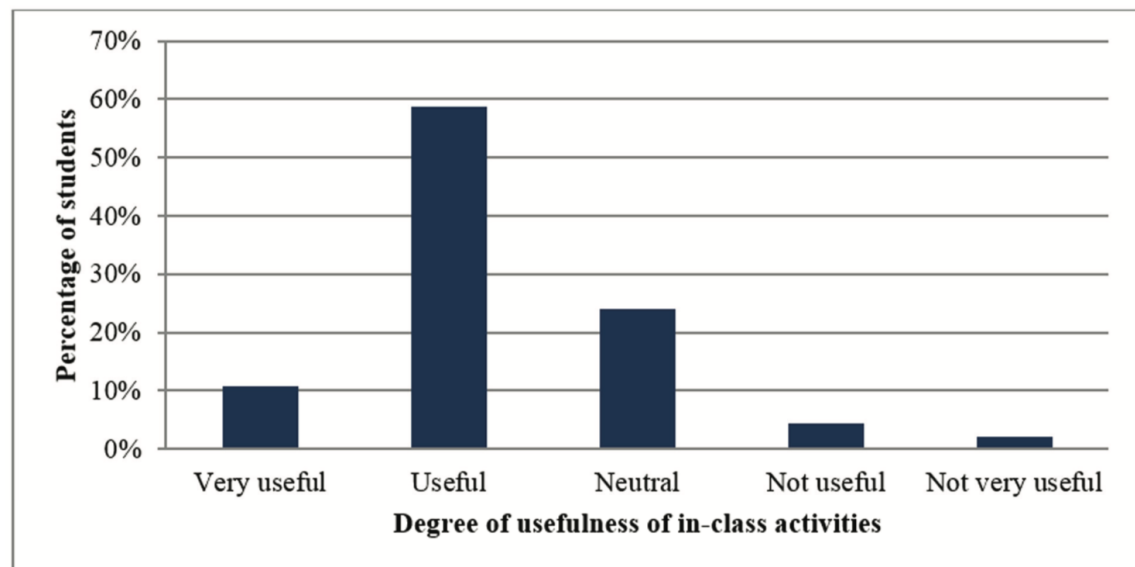


Figure 5: The Virtual Campus course page plays an important part in my learning. Source: Own elaboration.

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**Figure 7:** I find it easy to pace myself successfully through the course. Source: Own elaboration.



**Figure 8:** Teachers' wrap-up sessions based on the on-line quizzes. Source: Own elaboration.

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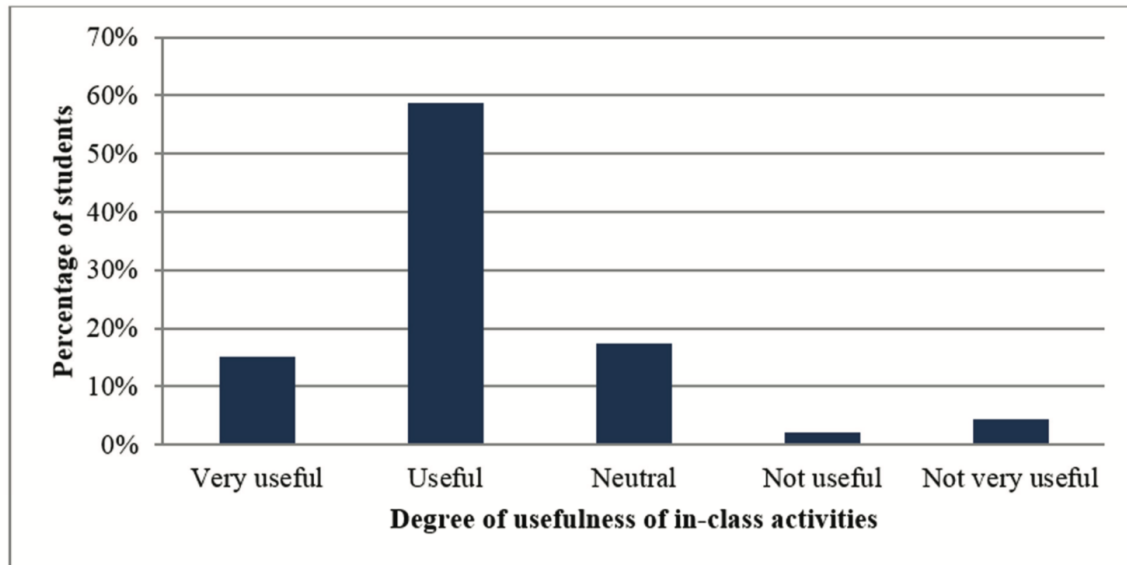


Figure 10: Wall-paper and poster activities. Source: Own elaboration.

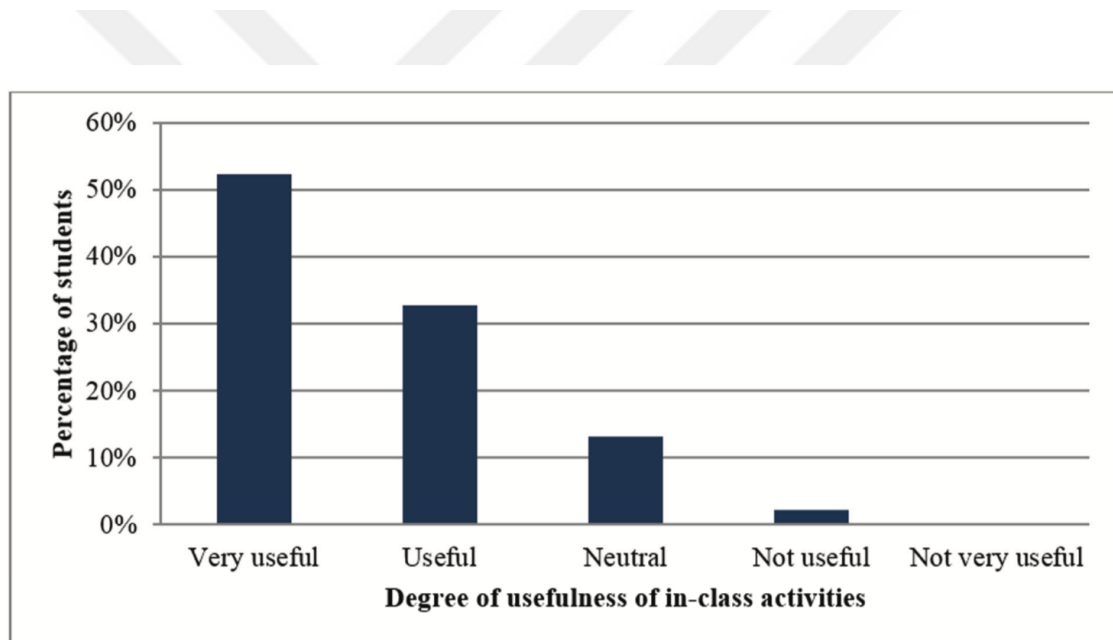


Figure 11: Balance of Payments exercises and working sheets. Source: Own elaboration.

Another similar experiment was carried out in Yildiz Technical University where advanced the reading and writing I-II course was presented through flipped learning to a total of forty-seven students during 2012- 2013 academic year (Basal, 2015). At the end of the study, it was revealed that four aspects were considered helpful: "learning at own pace, advance student preparation, overcoming the limitations of class time, and increasing the participation in the classroom." (Basal, 2015, p. 28) Regarding learning at own pace, students



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mentioned that the video lectures helped. To be able to pause, rewind or replay the video lecture was considered as a great opportunity by the students regarding comprehension. The flipped learning model enhanced student preparation by enabling the students to watch the videos ahead of time. Students were satisfied with coming to class with the knowledge they had already gained through the video lectures. That encouraged the students to take part in class activities a lot more. Students mentioned that not being stuck with the classroom hours for learning made the flipped method more beneficial. Based on the answers received from the students, " a flipped classroom decreases physical limitations of the classroom by presenting outside learning opportunities." (Basal, 2015, p. 32) The participation level increased due to the students coming to class with knowledge. Overall, his study revealed that students had more freedom over their learning, the level of their motivation significantly indicated an increase, and they were more involved in a student-centered learning environment.

Another study akin to flipped learning was carried out in Indonesia. The study was about "examining the students' perceptions on the implementation of the flipped classroom model. It involved 30 senior high school students who joined a writing class using flipped classroom model." (Afrilyasanti, Cahyono, & Astuti, 2017, p. 476) The questionnaires, interviews and observations that were done to scrutinize the students' reaction towards flipped learning acknowledged that students had a positive reaction after being exposed to learning writing through flipped learning. It was proven that students were actively captivated by the activities in class, and appreciated the work

The students' answers indicated that their attitude towards flipped learning was positive. The students attached importance to the work done in class. The students stated that the stimulating and intriguing in-class activities and collaborative work increased the level of their comprehension. Through flipped learning, they had the opportunity of immediate

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feedback both from the instructor and classmate. Having that chance enabled them to foster their writing skills. In a nutshell, the study indicated that providing the students with more time with the teacher and students in class for supporting work enabled the students to learn and comprehend more.

Another study that was carried out by Ocak and Boyraz (2017) with forty-two students in an English compulsory preparation class in the 2013- 2014 academic year resembles the studies mentioned above. The purpose of the study was to find out whether flipped learning makes a difference regarding learning a language in an effective way compared to a lecture-based learning. To do the study, they set up two classes; one with twenty-three students being taught using the flipped learning method and the other with nineteen students being taught using a traditional method. According to Ocak (2017), the benefits of the flipped classroom outnumbered the benefits of traditional learning method. Based on the results of the study, for a great deal participants flipped learning helped them to learn better, and increased the level of their motivation towards learning. Watching the video lectures before the class and being present in class with the necessary knowledge facilitated their learning and made them more enthusiastic. The students liked the idea of coming to class with knowledge and work on task with the teacher around them as a guide. Additionally, being able to play with the video in terms of rewinding, pausing and playing it whenever they needed helped them to learn better and encouraged them.

As stated in the study completed by Ekmekci (2017) with students of the preparatory class of Foreign Languages in Ondokuz Mayıs University in Turkey in the academic year of 2013-2014 , the results regarding the effectiveness of flipped learning are the same. Two classes were formed as a control and experimental groups. The experimental group with twenty-three English Language Teaching students in preparatory class was taught in flipped learning in their writing classes, and the control group with twenty ELT students was taught in the

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traditional learning method, which was face-to-face and lecture based. The aim of the study was to analyze the results of the two classes in terms of their writing achievement. The study brought to light that a great number of students preferred the flipped model to the traditional method.

A great majority of the students reported that they liked using the course management system where they could share and see what their classmates and instructors shared. The students also acknowledged that they enjoyed being able to watch the video lectures whenever they wanted to. One of the students said, “They motivated me to write.” (p. 159) Seventy-four percent of the students had a positive attitude about being taught a writing class using the flipped method. They expressed that learning to write was easier. When the researcher asked the students about the advantages and disadvantages of the method, the advantages outnumbered the drawbacks. Seventy percent of the students reported that it had more advantages, whereas thirteen percent disagreed. The rest did not state an opinion. When asked about whether they would choose flipped or traditional method, a high majority of the students preferred flipped learning. One of the students stated, “ I think I would prefer the flipped one, because I could watch the lesson anytime I want.” (p. 161) In general, the experimental flipped writing class model reinforced the participants’ motivation and encouragement towards learning. It also facilitated independent learning, and students gained the skills of taking responsibility for their own learning.

Granting all this, there have been some drawbacks noted in the studies mentioned above related to flipped learning. In the study conducted by Kvashina and Martynko (2015), some of the main challenges were confronted. The first was related to technical issues. It revealed that even though the technological tools that are needed for flipped learning are financially easy to get, creating the materials for online learning can take up more time than expected. Moreover, the instructors need to have IT skills to be able to produce the online

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materials. Secondly, the materials must be appealing to the students in terms of their interest and expectations. To be able to keep the students' enthusiasm and eagerness to learn, the content should be captivating and intriguing. The third issue was what to flip. By examining the syllabus carefully, what can be flipped should be decided since not every class can be flipped.

Ocak and Boyraz (2017) carried out a study in the mandatory English preparation class of Aksaray University and Afyon Kocatepe University in Turkey in 2013-2014 academic year to find out the effectiveness of the flipped model, and what they found in their study resembles the results of the study by Kvashinina and Martynko.

Although the participants enjoyed watching the video lectures and doing the related assignments prior to the class, no achievement on the paper was observed. The other complication was technology related. Students having all the technological tools should not be taken for granted. An insufficient Internet connection and not having the right apparatus to watch the videos were noted. Designing the video lectures might be time consuming for the instructor and additional guidance should be implemented for the instructors to eliminate the possible problems and to be able to have an effective and productive lessons. In addition to this, it was stated by the participants that making the right choice for the video plays an important role.

Likewise, in Basal's study (2015) technical issues were encountered. Since online tools and how they are applied are vital in flipped learning, it is as equally important the instructors are competent using and applying it. In the experiment that was done in Yıldız Technical University in the spring term, a prior study had been carried out so that the problems faced in the first place would not be encountered in the main experiment. It found that the students were not satisfied with the length of the videos and students came to class without watching the video lectures. Additionally, Basal (2015) noted that the role of the

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instructor implementing the flipped learning method plays a crucial role. Since the flipped learning method cannot be simplified and defined as only watching the video lectures, designing the class regarding the activities, using the time and collaboration are significant in terms of having a realistic flipped environment. It is also emphasized that how the instructor applies flipped learning is the key to the success. The suggestions listed to eliminate the complications listed above are being competent in using the technology needed for flipped learning, designing and implementing activities meeting the students' needs, making sure that the activities are intriguing, and setting up a good learning management system to be able to consolidate pre-class/post-class activities with in-class activities.

According to the results of the study that was done with forty-three students in preparatory class in Ondokuz Mayıs University during the 2013-2014 academic year, some challenges were encountered that are in line with the other studies mentioned above. The participants were asked a question regarding the benefits and drawbacks of flipped learning. Although a quite high percentage of the students provided positive answers, thirteen percent gave negative answers., and twelve percent were neutral. Some mentioned that they did not enjoy the flipped writing classes saying that they were uninteresting. Some noted the length of the video lectures was too long and the rest acknowledged that “slow Internet connection, videos are too boring. It takes time. (Ekmekçi, 2017, p. 161) Additionally, making the videos shorter and funnier was suggested by some of the students. The students were also asked whether they confronted any issues regarding the flipped learning method. Some students addressed the complications with the Internet connection. Even though some preventative measures were taken to eliminate the problem, the students didn't take the responsibility. The students were advised to download the videos before the lesson, but they didn't attempt to do it. Furthermore, the students disapproved the length of the video lectures stating that they took a lot of time. However, the length of the lectures was a lot shorter compared to the length of

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lectures in a traditional face to face learning environment. A small percentage of the students notified the instructors that writing the paragraphs in class created a feeling of distress and agitation because they needed to concentrate on which words to pick.

In a similar study by Afrilyasanti, Cahyono and Austin (2017), where the technology was again the problem. Being able to have access to the Internet should not be taken for granted. In that study, some students couldn't do their assignment due to the Internet inaccessibility.

According to Kelso's (2015) study, plenty of the students do not have Internet access at home in Oman and the technology that exists in Oman is not reliable.

The results of Hernandez and Rodriguez (2016) are in line with the results of the studies above. The students were dissatisfied with the low quality of the Internet connection in class.

The study that was done in the faculty of Business and Economics at the University of Oviedo with sixty-three students by Nanclares and Rodrigez (2016) shows similar results regarding drawbacks of the program. Despite the fact that students have a very good level of both spoken and written English, some challenges can be encountered. The students are required to have a good level of linguistic skills to be able to practice the cognitive skills, and the competency in the language is essential for maintaining the progress. When asked about the efficiency of the video lectures and technology, fifty-four percent of the students provided no opinion. The response could be perceived as in spite of students appreciating the video lectures and online materials, they might be more relaxed and prefer a traditional teacher-centered environment. Regarding the self-assessment of in-class activities, the low quality of the Internet connection, not having the right smartphone for the activities, and not being eager to use their wireless connection led to dissatisfaction. Another drawback was time-related. Students did not like the idea of an extra workload and attempted to watch the videos and do the related assignments along with comprehending the language.

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Lane- Kelso's (2015) study done with "a group of Omani graduate students experienced flipped instruction in their educational technology course during the spring semester of 2013." (Lane-Kelso, 2015, p. 143) The results are in line with the other studies regarding the issues stemming from flipped learning. The disadvantages can be listed as not having the Internet access at home, not having updated tools to be able to apply flipped learning, and instructors without guidance.

### **Discussion**

The studies compared and cited above indicate that the advantages and effectiveness of flipped learning outnumber the drawbacks of the model. First of all, the flipped learning method provides the students with an opportunity of finding their preferred learning style. Since the environment is no longer face-to-face, teacher-centered education, they will be autonomous learners through the pre-class work they need to complete and the tasks they will work on in the class. The studies also highlight that coming to class with the knowledge of that lesson created a more communicative and collaborative class due to the increase in participation. Students ended up being more enthusiastic towards learning and more confident in taking part in class activities. Unlike traditional learning, the students were given the appropriate environment to practice their high cognitive skills in class through engaging in hands-on activities, discussions and collaborative work. However, there were still some challenges along the way.

In all the studies above, one of the main problems was technology related. For instance, In Oman, the machines or/and tools were not updated enough to apply flipped learning efficiently, and some students did not even have Internet access (Lane-Keso, 2015).

Another issue was the length and the content of the videos and the time that was expected from the students to spend on them.

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Although flipped learning method sounds quite effective and engaging, it wouldn't serve its purpose unless some precautions are taken to eliminate the possible complications before implementing the program. In a medical English context, the students are already busy with their tough schedule. Considering that the department is already difficult and demanding, the students do not see medical English course as an essential part of their profession. Having said that, how to get the dentistry students to watch the pre-class video lectures before they come to class can be an issue. As Ocak and Boyraz (2017) suggest, the students who come to class without doing their pre-class tasks can be seated at the back of the class with computers and they can watch the video lectures there while the instructors and students are working on production and receiving immediate feedback. However, in the dentistry context, having a classroom with separate computers, and IT support would be necessary.

The other possible issue is the Internet connection and the smartphones the students use. The connection is frequently cut, and some of the smartphones are not suitable for in-class online games. Students not being able to keep themselves in the game is one of the standard problems when playing an interactive game with the whole class. Again, IT support plays a crucial role here.

Another complication might well be the English level of the videos. Since the students' level of English is not homogeneous, the language should be simplified enough to prevent them from getting demotivated while watching the video lectures. Lastly, as Basal (2015) mentions in his paper, the instructor is a very significant factor. The videos are supposed to be prepared and designed by the instructors. Additionally, the instructors should integrate appropriate in-class activities in an effective way as well. Therefore, training about how to apply flipped learning must be provided to the teachers.

The other issue that needs to be taken into consideration is that the number of the students there are in dental English classes. There are 45 students in one class and 40 in another. To be



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able to implement the flipped learning method, the number of the students should be decreased

### **Proposal**

#### **Introduction**

Since flipped learning has the earmarks of an ideal learning setting, I have the intention of implementing it in her context. The freshmen and sophomore students of Dentistry Department of the University are required to take medical English classes, which are worth four credits. The objectives of these classes are to familiarize the students with the English medical terminology, enable them to use the knowledge they gain in the classroom through mock dentist-patient dialogues, and improve their listening skills related to dentistry. The circumstances convey the impression that these medical classes could be taught using flipped learning. The students can learn the medical terms with the tools provided by the instructor through the learning management system and the class time can be spent on production, analyzing and applying.

#### **Context**

In this university, there are sixty-five students enrolled in Dentistry 1 and eighty-five students in Dentistry 2. They are required to take four credits of Dental English. The objective of the course is to help familiarize learners with dental terminology and enable them to communicate, read, and write through a variety of exercises appealing to different learning styles, and the course content is to apply a variety of exercises and practice activities based on receptive and productive skills to provide learners with the opportunity to use language actively and work collaboratively.

The students are not provided books or textbooks. The instructors use different sources including some dental websites on the Internet, and three books on dental English:

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- Kinga S.Pasieka, Marcin Otto, 2011, Open Your English Wider, Bestom
- Virginia Evans, Kori Salcido, 2016, Career Paths Dentistry, Express Publishing
- Virginia Evans, Kori Salcido, 2016, Career Paths Dental Hygienist, Express Publishing

The lessons are conducted through PowerPoints and handouts that are taken from the books and Internet sources. Although the PowerPoints are prepared to be as interactive as possible, the lessons are mostly lecture based. The first challenge is that the handouts and topic presentations take up so much lesson time that the instructor has difficulty creating a collaborative learning environment in which production can occur. The second issue is that the students do not have time to memorize and internalize the terminology that is presented in class. However, they are given exercises to work on based on the PowerPoints they are shown which takes up most of the class time. Therefore, by flipping the dental English course, the students would be able to come to the class with the terminology memorized which will lead to productive hands-on activities and collaborative work. Through flipped learning, the position of the instructor will be changed into from a lecturer to a guide. The learning environment will be transformed into a student-centered environment from a lecture based traditional method. Students will have more opportunities to improve their receptive and productive skills since they will come to the class prepared and work on the knowledge they have already gained. By having an increased level of motivation towards learning, they will be more eager to learn and participate in a communicative environment. The low-achievers will have more opportunity to improve their needs by taking the responsibility for their learning and getting immediate feedback both from their instructor and classmate.

### **Typical Class**

The typical class starts with a revision exercise or worksheet that is related to the previous lesson. The revision exercise varies from a handout to a short PowerPoint exercise that is

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done with the whole class. It takes approximately ten to fifteen minutes. Afterward, the new dental topic is presented to the students through a PowerPoint that can take up to half an hour. Following the presentation, the handouts related to the topic including gap-fill, open-ended questions, matching and writing a mock patient-dentist dialogue are given to the students. On average, it takes almost twenty minutes. What the students are expected to do is to understand and remember which are low-level cognitive skills based on Bloom's Taxonomy (Fell-Kurban, 2016), whereas sharing, creating and evaluating which are high cognitive skills only take up the last ten minutes of the class.

### **Flipped Learning and Second Language Acquisition**

Flipped Learning consists of the following learning theories such as behaviorism, social learning theory, cognitivism, constructivism, connectivism and Bloom's Taxonomy of Learning. (MEF University, 2015). According to Lightbrown and Spada (2012), behaviorism was effective and powerful in the 1940s and 1950s, mostly in the States. The fundamental principle behind the theory is that children copy the language they hear around them, and the way they are reacted to encourages them to make more attempts. Children form a language habit through a steady and persistent reinforcement. Behaviorist approaches includes " task analysis, specific content objectives, sequenced instruction, active responding, performance related reinforcement in particular." (MEF University, 2015,pg. 14) In flipped learning, the nature of the video lessons allows students to view as many times as they want, and they can take notes which corresponds to the active learning in behaviorist philosophy.

The social learning theory believes that learning happens when we integrate with each other through observations and copying which paves the way for motivation and performance. (MEF University 2015) In flipped learning, interaction plays a huge role which brings out socializing. Since the instructor is a guide, students socialize with their peers and their

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instructors for assistance and that leads to more participation and a higher level of performance.

Lightbrown and Spada (2012) states that cognitivism is about what the learners know about the language and how the knowledge they have affects the language they learn. J.R Anderson (1995) and Robert Dekeyser (1998, 2001, 2007) assert that language learning begins with declarative knowledge and continues with procedural knowledge. Declarative knowledge is the language knowledge that the learners already have and can explain, and the procedural one is to be able to use that knowledge. The idea is if the learner is provided with enough opportunity and practice, the procedural knowledge can become automatic. Students who are taught with flipped learning method are given enough opportunities to change their declarative knowledge to procedural knowledge.

Constructivism is how we build up our knowledge and comprehend the world. In this theory, learners are provided with student-centered environment and it promotes discovery learning. Students are engaged with real-life experiences through a variety of projects and construct their knowledge accordingly.

Connectivism is all about the knowledge that is gained through connections, networks and experiences. In flipped learning class, since the teacher is not the lecturer, the students are encouraged to work with each other which creates connection and network

Bloom's Taxonomy is a model that categorizes the learning objectives starting from remembering (low-level skills) to sharing (high-level skill). In flipped learning, students do tasks that need low cognitive skills prior to the class through doing some online work and do tasks that need high cognitive skills in class such as discussions and doing some projects.

### **How flipped learning can be implemented**

The following syllabus is designed for a class with 12 freshman dentistry students.

Topic is Cosmetic Dentistry

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### Pre-class

The learning objective is to prepare the students to come to the class with a prior knowledge related to cosmetic dentistry such as veneer, crown, gum depigmentation and gingivectomy and get them to become familiar with the terminology.

The students will be asked to watch a video not more than twenty minutes long on the learning management system regarding cosmetic dentistry. An online quiz with multiple choice and open-ended questions will be required.

### In-class

Learning objective: To get the students **to** be involved in engaging activities, enhance integration and communication.

Students will be seated at desks designed for a group of 4. The answers of the online quiz related to the multiple-choice part will be hung on the walls for the students to check. The students will be encouraged to go over the answer key in their groups and compare their answers with each other. The teacher will monitor the students and intervene when there is a need. For the open-ended question part of the quiz, the teacher will write the open-ended questions that were on the online quiz on the board. The teacher will then ask each group to discuss their answers in the group, and after deciding on an answer, the teacher will ask them to write the answers on the board. During that time, teacher will monitor the students from a distance and play the role of a guide. After that, an online quiz game called Kahoot will be played to check how competent they are regarding the dental terminology related to cosmetic dentistry.

Following that, each group will be given a piece of paper with one case on it and asked which cosmetic dentistry procedure should be used and why. They will be asked to do that for 4 different cases. When one group finishes with their case, they will be given a new one.

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When they are done, they will be asked to hang their results on the board. When everyone is finished, students will be asked to stand up and check the answers.

At the end of the class, students will be asked to write a mock patient-dentist dialogue related to one procedure. When they are done, they will be asked to act the dialogue out.

### Post Class

The learning objective is to be able to put the information into practice.

Students will be asked to pick a cosmetic dentistry procedure and prepare a presentation about a patient, his or her complaints, and the procedure.

## **Conclusion**

Flipped learning is a method where it takes away the teacher-centered environment and changes it with a student-centered method. The students are given opportunities to become more active and enthusiastic through pre-class and in-class activities with the help of technology. The flipped learning environment ensures that the class has the elements of integration, discussion, communication and collaboration. All the components of the flipped method lead to a higher level of motivation, performance and confidence. Despite the countless benefits the flipped learning contributes to the students' learning, the drawbacks should not be ignored. To be able to apply flipped learning and get the utmost benefit from it, one should note that the possible complications should be listed and preventive measures should be taken to eliminate those problems that are mostly technology related.

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