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Igniting Learning Motivation: Impact of Flipped Teaching on Students' English Learning Motivation, Self-Regulated Learning, and English Learning Outcome

Trang M. T. PHUNG[1], Minnie H.M. HSIEH[2], Chich-Jen SHIEH[3]

Abstract

The rapid development of information technology has had a revolutionary impact on science, engineering, and other fields. Computers, tablets and smartphones are becoming more and more popular, and digital technology is becoming the modern mainstream. Teachers can make some changes in the teaching process. In the domestic promotion of various innovative teaching models, flipped teaching is the most popular one. It aims to change the traditional teacher-centered teaching methods and give students back the control over their learning. Flipped teaching has been used in recent years to make classes more interesting. The study was designed as experimental research. This study involved 106 students from Vietnam studying finance at Taiwanese universities. The experimental implementation took 18-week of flipped teaching. The results found significant positive effects of 1. Flipped teaching on English learning motivation, 2. Flipped teaching on self-regulated learning, and 3. Flipped teaching on English learning outcome. According to the results, it is expected that the study may help students to easily understand the concept in the learning process and increase English learning motivation and self-study ability in order to achieve effective learning.

Keywords: flipped teaching; English learning motivation; self-regulated learning; English learning outcome.

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Introduction

In a survey, it was found out that most classes focus on traditional teaching, in which about 70% of students have few opportunities to express their opinions in class, about 70% of students have few opportunities for small group discussions, and 45% of students seldom ask for classmates' help with academic problems. Each student is like an independent, helpless and silent island when learning in class (Foldnes, 2016). In the traditional teaching process, teachers lecture on stage and students listen; teachers follow the schedule and tell the content to students, and students focus on the narration and take notes. The result of such teaching is simply the transmission of knowledge, but it does not achieve the absorption and internalization of knowledge, so the learning effect is reduced. Many students cannot think or understand the content immediately when they receive information (Hu & McGeown, 2020). Students do not have achievement and satisfaction in the learning, which reduces their motivation to learn English. Chen *et al*. (2015) points out a correlation between students' academic performance and their learning motivation; students with higher motivation to learn English tend to have better academic performance. Therefore, improving students' motivation to learn English is crucial for achieving good English academic results. Students with strong motivation to learn English possess keen observation skills, rich imagination, and a proactive spirit of exploration. They are able to delve into and analyze problems in their studies, continuously improve solutions, and skillfully apply the knowledge they have acquired. (Price & Walker, 2019). Therefore, teachers can identify the key learning points for students, analyze and discuss problems in detail, and improve students' willingness to learn in the classroom. If students' learning motivation increases, the promotion of students' ability has a double effect. After students' English learning motivation is aroused, teachers should maintain the state, constantly improve teaching methods and apply incentives and inspirations to keep students' learning motivation at a stable level and make students change the previous learning state and engage in active learning.

The so-called "there is no fixed teaching method, but there is an appropriate method" aims to develop students' abilities and not settle for the status quo, but constantly change teaching methods. The rapid development of information technology has had a revolutionary impact on science, engineering, and other fields. Computers, tablets and smartphones are becoming more and more popular, and digital technology is becoming the modern mainstream. Teachers can make some changes in the teaching process. In the domestic promotion of various innovative teaching models, flipped teaching is the most popular one. This method aims to change traditional teacher-centered teaching methods and give students back the control over their learning. In this case, the flipped classroom allows students and teachers to discuss learning problems that have occurred at home and to interpret and to discuss the parts that most students find confusing and difficult to understand. Teachers can adapt the lessons to the students' level to meet the

learning conditions of each student. Therefore, the flipped classroom can truly enhance students' motivation and effectiveness in learning English. Nevertheless, flipped teaching is currently applied to languages and science (Hanson, 2016; Chen & Hwang, 2017; Jeno *et al*., 2017). Therefore, this study hopes to help students to know the learning process and improve their English learning motivation and self-directed learning ability, thereby demonstrating more effective learning.

Literature review and hypothesis

In this teaching model, students study on their own by watching videos or data assigned by their teachers and solve problems through small group discussions in classes (Lopes & Soares, 2018). Teachers give timely instruction and provide help when students encounter problems. Eryilmaz & Cigdemoglu (2019) pointed out that the core concept of flipped teaching as students' active learning, participation and engagement, and use of technology in line with the blended learning curriculum design. Regarding curriculum design or teaching strategy, the meaning of flipped teaching in instructional assessment can be observed in students' cooperative learning and interaction with others (Zhang, 2018). Another core focus revealed that learning is personal and each person have a distinct speed of learning. When designing the curriculum with this principle, it should be kept in mind that there is no waiting and repeated lectures in the learning process, but more time to understand students' difficulties and solve their problems. According to each student's learning conditions, proper practice and assessment can be offered (Martínez-Jiménez & Ruiz-Jiménez, 2020).

Hwang & Chen (2019) indicated that the design of flipped teaching relies on teachers uploading instructional videos 3-7 days before the class. Teachers allow students to ask questions 20-30 minutes before the class, and consider the class as an alternative assessment environment for regular evaluation. In this way the students can prepare themselves and self-study before classes. Several questions are preset in the videos. In classes, teachers create heterogenous groups of students considering their academic performances. These groups work actively for discussions to collaboratively find out answers and solve problems. Teachers listen to and join in group or individual discussions to arouse students' learning interests. It can be claimed that traditional teaching is worse than flipped teaching. For instance, in an experimental implementation of flipped teaching to teaching mathematics in middle schools, the students showed passion and desire toward learning (Azizan *et al*., 2018). Namaziandost and Çakmak (2020) found out that, in a teaching model integrated with flipped classroom and mobile learning, students' English learning outcome significantly outperformed those who were exposed to traditional didactic teaching model. Flipped classroom can positively affect students' performance and English learning motivation. The questionnaire and interview data revealed that teachers and students showed positive attitudes

towards a teaching method integrated flipped classroom with mobile learning. Therefore, this study proposes the following hypotheses.

Hypotheses (H1): Flipped teaching has significantly positive effects on English learning motivation.

Sailer and Sailer (2021) proposed several methods to facilitate students use of the learning strategies with flipped teaching in order to establish an active learning mechanism in which a self-directed learning mechanism is applied, online discussions are conducted, video related worksheets are planned and assigned, and simple tests are practiced evaluate students' self-studies. Tests enhance students' extrinsic motivation; however, through full comprehension of the video content and participation and achievement in the class interaction during the learning process can transform it into intrinsic motivation (Leatherman & Cleveland, 2020). Cenk and Deniz (2018) practiced flipped classroom in the economics curricula and provided diverse learning resources for their students (e.g. textbooks, instructional videos, and recording presentation) to create a teaching experience different from traditional teaching. In order to ensure students' full preparation before classes, students were expected to complete randomly assigned worksheets and accept the evaluation. Teachers, in the class, encouraged their students to use the principle of economics when they answer questions before the experiments. They provided their students with feedback and discussed with students to create the interaction effect and engage students in the course with self-regulated learning. Therefore, this study proposes the following hypotheses.

Hypotheses (H2): Flipped teaching has significant positive effects on self-regulated learning.

Ho (2019) proposed that after the practice of flipped classroom, students' learning behavior was transformed into positive, their attendance rate increased, they were focused in class, the inquiry periods were increased, and the classroom atmosphere was changed. Marina and Ridlo (2021) Using computers to create e-books and combining the flipped classroom with self-regulated learning, students can complete tasks through e-book editing software during the learning process. The study revealed that the teaching method which integrated flipped classroom with problem-based learning significantly enhanced English learning outcome and promoted English learning motivation. Loes *et al*. (2018) used flipped teaching in Junyi Academy and found out that applying flipped teaching to the remedial classes of mathematics turned out to be effective, and most learners had positive attitude and opinions on the remedial teaching of mathematics with the integration of flipped teaching in Junyi Academy. The students showed a high intention to use and satisfaction towards the practice. Therefore, this study proposes the following hypotheses in this study.

Hypotheses (H3): Flipped teaching has significantly positive effects on English learning outcome.

Methodology

Research Variables and Definitions of Constructs Variable

English learning motivation. According to He (2021), students' motivation for learning English is divided into 2 dimensions:

1. *Intrinsic Motivation*: This dimension describes students' motivation to learn challenging courses.. Under this motivation, learning is seen as an interest or hobby, as well as a way to broaden horizons. Students with intrinsic motivation will actively and proactively learn new courses; they learn to develop their personal potential and achieve their ideals.
2. *Extrinsic Motivation*: This dimension includes learning to gain recognition from others, achieve better grades, pass exams or assessments, show off in front of others, compete with classmates, and gain praise and attention from elders or the opposite sex. This motivation also stems from factors such as avoiding punishment and scolding, avoiding to feel ashamed of failure and to be able to enter one's ideal school in the near future.

Self-regulated learning. According to Zheng *et al*. (2020), the English learning outcomes in this study comprise 3 dimensions:

1. *Internal process*: This domain includes self-efficacy, learning objectives, explanatory style, and academic learning value.
2. *Behavioral approach*: This domain refers to cognitive learning strategy and metacognitive strategy.
3. Environmental preference: Each self-regulated learning process mutually affects the environment.

Learning outcome. According to Xu *et al*. (2019), English learning outcome contains 2 dimensions:

1. *Learning effect*: This dimension encompasses exam scores, time required to complete the schedule, and grades.
2. *Learning gain*: This dimension encompasses learning values, sense of accomplishment, and preferences.

Participants of the study

This study employed an experimental research design. The participants were 106 Vietnamese students and majoring in finance at universities in Taiwan. The experiment lasted 18 weeks (36 class periods) and utilized a flipped classroom teaching model.

Process of instructional design

This teaching program lasted for 18 weeks. A pre-test was conducted before the program began to assess students' motivation to learn English. The first week explained the course content, grouping methods, and assessment criteria. The flipped classroom teaching model was then implemented starting in the second week, with a review and post-test in the final week.

Results

Reliability and validity analysis

This study used factor analysis to extract two factors of English learning motivation; similarly, it extracted three factors of self-directed learning; and finally, it extracted two factors of English learning outcomes.

Table 1. Factor analysis of this study

variable	factor	eigenvalue	α	cumulative variance explained
English learning motivation	intrinsic motivation	2.637	0.87	75.169
	extrinsic motivation	2.169	0.86	
Self-Regulated learning	internal process	3.421	0.92	73.227
	behavioral approach	3.055	0.90	
	environmental preference	2.762	0.89	
Learning outcome	learning effect	4.257	0.91	78.591
	learning gain	3.182	0.92	

Impacts of flipped teaching on English learning motivation, self-regulated learning, and English learning outcome

Analysis of Differences in flipped teaching in English learning motivation: This study used analysis of variance to explore the impact of flipped classroom teaching on English learning motivation, specifically analyzing and explaining students' learning motivation before and after the flipped classroom teaching process. Table 2 shows that students' intrinsic motivation (4.37) was higher after the flipped classroom teaching process than before (3.62). Furthermore, students'

extrinsic motivation (4.16) was also higher after the flipped classroom teaching process than before (3.51). Therefore, hypothesis H1 is validated.

Table 2. Analysis of Differences in Self-Directed Learning within the Flipped Classroom

variable		F	P	Scheffe post hoc
flipped teaching	Intrinsic motivation	18.751	0.000**	after flipped teaching>before flipped teaching
	Extrinsic motivation	22.634	0.000**	after flipped teaching>before flipped teaching

*Notes: ** p<0.01.*

Analysis of Differences in Self-Directed Learning within the Flipped Classroom Approach: This study uses analysis of variance to explore the impact of flipped classroom teaching on self-directed learning, specifically analyzing and interpreting students' learning situations before and after the flipped classroom teaching process. Table 3 shows that after the flipped classroom teaching process, students' internal process scores (4.06) were higher than before (3.47), their learning gains (4.18) were higher than before (3.56), and their environmental preferences (4.22) were also higher than before (3.38). Therefore, hypothesis H2 is validated.

Table 3. Analysis of the differences in English learning outcomes under the flipped classroom

variable		F	P	Scheffe post hoc
flipped teaching	internal process	25.186	0.000**	after flipped teaching>before flipped teaching
	behavioral approach	31.718	0.000**	after flipped teaching>before flipped teaching
	environmental preference	34.971	0.000**	after flipped teaching>before flipped teaching

*Notes: ** p<0.01.*

Analysis of the differences in English learning outcomes under the flipped classroom model: Based on analysis of variance, the impact of the flipped classroom on English learning outcomes was explored. The results before and after the implementation of the flipped classroom were analyzed and explained. Table 4 shows that the learning outcomes and learning gains after the implementation of the flipped classroom (4.33 and 4.25, respectively) were both higher than before implementation (3.82 and 3.71, respectively). Therefore, hypothesis H3 is validated.

Table 4. Analysis of the differences in English learning outcomes under the flipped classroom

variable		F	P	Scheffe post hoc
Flipped teaching	Learning effect	28.441	0.000**	After flipped teaching>before flipped teaching
	Learning gain	32.783	0.000**	after flipped teaching>before flipped teaching

*Notes: ** p<0.01.*

Discussion

The research results revealed that teachers, in flipped classrooms, can walk around to understand whether students of were seriously watching videos. Students, watching the videos together with classmates can better involve in the video content and topic practice with good learning atmosphere. When they have doubts, they first discussed with classmates and then asked teachers about the problems. Students regarded the teaching method with flipped classroom as novel and they showed willingness to accept the teaching method. They regarded the teaching method being novel and interesting and expressed willingness for more applications in the future. Consequently, most of the students did not reject the teaching method. From teachers' points of view, they considered that students' involvement in and attitude towards flipped classroom can affect teachers' willingness toward the continuous practice. Teachers used rich oral expressions to create a fun atmosphere in class. They also used questions in online instructional videos for groups during small group discussions and explained with cases in life for students' easy absorption. Teachers' are walking around the classrooms to observe students' discussions and randomly asking students for interpretation increased students' interests in the course content and facilitated their attention. Rewards promoted students' confidence and achievement to further enjoy learning and regard the course content not being so difficult.

Conclusion

The research results indicate that students receiving flipped classroom instruction are able to think more actively, ask questions, and seek solutions during their English learning process. Therefore, discussed with peers, explored problems, actively sought for solutions, concerned about other classmates' learning and actively helped their classmates with learning difficulties. as Additionally, they discussed their opinions in groups when they encountered doubtful concepts and principles. Students therefore confirmed a promoted personal learning performance

and repeatedly watch videos after classes to further clarify concepts and principles. With video preview before classes in flipped teaching, students of understood the course content in advance. Meanwhile, teachers assisted students with the problems encountered and when they had doubts in the video watching process and had more time to help students behind the schedule. By doing so they adjusted the course schedule and teaching steps according to the learning pace of students and helped them build the learning schedule and learning points.

Recommendations

The findings of this study indicate that flipped teaching can effectively enhance design students' learning motivation, self-regulated learning, and learning outcomes. Therefore, if schools and instructors hope to embed this model in everyday practice and allow it to have a lasting impact, they need to make coordinated adjustments at three levels: course design, instructional support systems, and the learning environment.

In terms of course design, it is recommended that instructors treat pre-class online self-study and in-class hands-on activities as two closely connected parts of a single learning process, rather than simply converting a portion of lectures into video. Pre-class instructional videos should be concise, well structured, and anchored in authentic design practice. Besides demonstrating procedural steps, the videos should clearly highlight key concepts and common mistakes, and end with two to three guiding questions or short exercises that students are expected to bring into the classroom for further discussion and application.

With respect to cultivating self-regulated learning, the results show that students improved in internal processes, behavioral orientation, and environmental orientation, indicating that design majors are capable of developing independent learning habits when given appropriate structure and guidance. Accordingly, it is advisable for instructors, at the beginning of the semester, to work with students to establish a "flipped learning agreement" that spells out expectations for weekly preparation time, basic requirements for video viewing and note-taking, and norms for in-class participation and discussion. This may be complemented with learning worksheets or an online question space, where students are asked to submit at least one point of confusion or one issue they wish to explore further before each class. As the course progresses, instructors can regularly invite students to review their own learning status—for example, by keeping brief reflective logs or learning journals—so they can check whether they have followed their study plans and whether they are actively seeking resources and assistance when needed.

In terms of the learning environment and resource support, the study found clear gains in students' environmental orientation and learning outcomes, suggesting that sound hardware and platform arrangements help to amplify the benefits of flipped instruction. At the institutional level, it is recommended that schools build or integrate a stable, user-friendly digital learning platform that allows

instructors to upload videos, materials, and formative assessment tools with ease, while enabling students to document their learning process and submit questions conveniently. Because design courses typically involve substantial hands-on work and presentation of student products, classroom spaces should be arranged flexibly, with movable seating and group configurations, as well as adequate projection, audio, and mobile-device support, so that students can work, follow explanations, and interact with peers at the same time.

Finally, at the department or program level, it is recommended to establish a professional learning community centered on flipped instruction to foster experience sharing and joint curriculum planning among faculty. Instructors from different design fields can collaboratively discuss course objectives and core competencies, share the videos, task designs, and assessment approaches used in their classes, and periodically review changes in students' learning motivation, self-regulated learning, and learning outcomes. Through coordination across courses and year levels, this can help prevent students from being overloaded in particular subjects or facing overlapping online preparation requirements, while gradually shaping a department-wide culture of flipped learning.

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