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Flipping English Classrooms as Learning in the 21st century
กลับด้านห้องเรียนภาษาอังกฤษให้เป็นห้องเรียนแห่งการเรียนรู้ในศตวรรษที่ 21

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Abstract

In the digital era, the world is getting more complex, and technology has become an important tool having a profound impact on all aspects of people's lives including the field of education. Therefore, to prepare students for real world of work, teaching method should be taken into account. It is clear that a traditional way of teaching or teacher-centered learning emphasizing teaching language from textbooks with rote memorization may not be an appropriate way to teach students who are digital natives, native speakers of technology, and fluent in the digital language of computers, video games, video cams, cell phones, the Internet and all the other tools of the digital age. Instead, students should be encouraged to learn knowledge of subjects and develop necessary skills in the 21st century such as life skills, learning skills, and technology skills. To assist students to learn more effectively, time in the classroom should be spent meaningfully. Students should be allowed to think, discuss, and present their ideas to one another. Therefore, this article aims to provide the background and information of the flipped classroom as the teaching method in order to foster characteristics of 21st-century learners.

Keywords: Flipped classrooms, English instruction, Learning in the 21st century

บทคัดย่อ

ในยุคดิจิทัลที่โลกมีความซับซ้อนมากยิ่งขึ้น เทคโนโลยีถือเป็นเครื่องมือที่มีบทบาทอันสำคัญยิ่งในทุกแง่มุมของชีวิตผู้คนรวมไปถึงการศึกษา ดังนั้นเพื่อเสริมสร้างผู้เรียนให้มีความพร้อมสู่โลกแห่งการทำงาน การจัดการเรียนการสอนถือเป็นสิ่งสำคัญ วิธีจัดการเรียนการสอนในอดีตที่เน้นผู้สอนเป็นศูนย์กลาง และมีการเรียนรู้จากตำราเรียนโดยเน้นวิธีการท่องจำอาจเป็นวิธีการที่ไม่เหมาะสมสำหรับผู้เรียนในยุคปัจจุบันซึ่งเป็นชาวดิจิทัลโดยกำเนิด หรือเป็นผู้เชี่ยวชาญในการใช้เครื่องมือดิจิทัลต่าง ๆ เช่น คอมพิวเตอร์ วีดีโอเกมส์ กล้องวีดีโอ โทรศัพท์มือถือ อินเตอร์เน็ต รวมถึงเครื่องมือชนิดอื่น ๆ ด้วยลักษณะดังกล่าว ผู้เรียนควรได้รับการเสริมสร้างให้มีความรู้และมีทักษะที่จำเป็นในศตวรรษที่ 21 เช่น ทักษะการใช้ชีวิต ทักษะการเรียนรู้ และทักษะด้านสารสนเทศ สื่อ และเทคโนโลยี รวมถึงช่วงเวลาในห้องเรียนควรเปิดโอกาสให้ผู้เรียนเรียนรู้การคิดอย่างมีวิจารณญาณ การระดมความคิด และการแสดงความคิดเห็นต่อผู้อื่น ดังนั้นบทความนี้มีจุดประสงค์ในการแนะนำห้องเรียนกลับด้านเพื่อสร้างลักษณะของผู้เรียนในศตวรรษที่ 21

คำสำคัญ: ห้องเรียนกลับด้าน, การสอนภาษาอังกฤษ, การเรียนรู้ในศตวรรษที่ 21

Introduction

With the growth of technological innovation in the age of globalization, technology alters people's lives and society in terms of business, transportation, industry, or even education (Oke & Fernandes, 2020). This has an influence on the new generation who was born to be digital natives, which refers to those who are familiar with using technology as a means of communication and associating with social networks in their everyday lives (Prensky, 2001). Owing to the rapid change of the world and the context of the new generation, Prensky (2001) suggested that education must change teaching methods to meet the styles and characters of the new generation and foster them to be 21st century learners. One of the promising instructional approaches emerging to support integrating technology in teaching and learning is the flipped classroom.

The flipped classroom is under the constructivist learning theory, which asserts students to construct knowledge and their own understanding while learning and interacting with friends and teachers. The concept of the flipped classroom is that the whole classroom or homework is flipped. Simply put, students are expected to view and learn the lessons from the videos before

they come to the classroom and do assignments or homework in the class (Bergmann & Sams, 2012; Strayer, 2007). The flipped approach is widely implemented in English classrooms in many countries, for example, Saudi Arabia (Ahmed, 2016), Taiwan (Hung, 2015), China (Yujing, 2015), Korea (Sung, 2015), Indonesia (Herlindayana, Sahlan, & Alberth, 2017) and Thailand (Jantasin, 2015; Thaichay & Sitthitikul, 2016; Chavangklang & Suppasetseree, 2018; Santikarn & Wichadee, 2018; Wei & Sukavatee, 2019). All of these previous studies revealed favorable outcomes of including the flipped teaching in language teaching. To understand more about the flipped classroom, details are provided in the following sections.

Definition of the flipped classroom

The concept of the flipped classroom has existed for many years. It is not a new phenomenon of education but with a wide range of technology and the ease of access to the Internet, the flipped classroom is gaining attention. According to Logan (2015), Siegle (2013) and Lage, Platt, and Treglia (2010), the flipped classroom is also known as "Inverted classroom," "Backwards classroom," "Reverse instruction," "Reverse teaching," "Flip teaching," and "Flipping the classroom." It is one type of blended learning which is a combination of a face-to-face classroom component and an appropriate use of technology in a language course. The term 'technology' refers to a wide range of current technologies such as the Internet, CD-ROMs, and the use of computers as a means of communication. All of these materials are used to enhance teachers' lesson plans and create interaction and motivation for both teachers and students in the classroom (Sharma & Barrett, 2007). It seems that the flipped classroom is related to integrating technology in teaching and learning process, but Lockwood (2014) argues that flipped learning is not necessary to involve videos or technology. Instruction can be delivered to students via reading a book.

The term "the flipped classroom" has been defined by many scholars. According to Arnold-Garza (2014), Lockwood (2014), Strayer, (2007), EDUCAUSE (2012), and Bergmann and Sams (2012), the flipped classroom is an instructional approach which is a paradigm shift from the traditional educational model to a pedagogy-centered approach. The whole classroom or homework is flipped. In other words, the video lecture is done at home and the homework is

finished in the classroom. The instructional videos in the format of slides, audio, podcasts or narrated presentations are created by teachers themselves or selected from other sources. Bishop and Verleger (2013) conclude that the flipped classroom consists of two parts: in class and out of class activities. Group-based interactive learning activities are employed in the classroom whereas individual video-based learning activities are done outside the classroom.

History of the flipped classroom

The idea of flipping the classroom has been applied in teaching over the years. It is started by Eric Mazur in the 1990s. He is a professor at Harvard University who uses the concept of flipping classroom in his instructional strategy called "peer instruction". He said that "the key point is to get students to do part of the work ahead of the lecture" (p.22) and his lectures "elaborate on the reading, address potential difficulties, deepen understanding, build confidence, and add additional examples" (p. 10). From his point of view, students need to learn how to transfer information they have learned outside the classroom, connect it to their own experiences, and come up with the new concepts in the classroom. Moreover, he claimed that with the help of technology that allows students to view video before coming to study, it could increase interaction between teachers and students. They have more time to respond and give or receive feedback during discussion in the classroom (Mazur, 1997).

However, the flipped classroom has been widely used because of two chemistry teachers named "Jonathan Bergmann" and "Aaron Sams" from Woodland Park High School in Woodland Park, Colorado. In 2007, both of them noticed that some students missed the class because they took much time to travel to school or had to take part in doing activities at school such as sporting events. Moreover, other students could not catch up with key concepts of the lessons in the classroom. With all of these reasons, Jonathan and Aaron tried to find the way to help students learn better. Aaron discovered a program which could record PowerPoint lectures. Hence, they tried it out by recording live lectures and posting them on YouTube. Consequently, students loved these videos. It was very useful for those who missed the classroom and would like to review the lessons again. With good feedback, two chemistry teachers continued improving it. Aaron asked his friend if it was better to prerecord all lectures and let students watch it as

homework. Then the entire class time was devoted to helping students who did not understand the concepts. Coming up with this idea, they both began to implement the flipped model, and the flipped classroom was finally born. Teachers from other countries noticed what these two teachers did from videos on YouTube. Consequently, they adopted this teaching method. Since then, the flipped classroom has been used as a teaching model in a wide range of subjects around the world (Bergmann & Sams, 2012).

Models of the flipped classroom

Cockrum (2014) introduces many models of the flipped classroom. He divides it into three types of iteration as follows:

1. The first iteration

1.1 Traditional flip

This is the first and the most used model. Most teachers start to flip their class with this model. To begin with, teachers record videos and post them for students to watch at home. After that, they come to the classroom with knowledge and practice doing exercises in the classroom. Students have a chance to work in groups and help each other to complete the task. The role of teachers become a facilitator or a coach.

1.2 Writing workshop flip

This model is modified by Lucy Calkins in 1986. It focuses on helping students write in class, work in class, make choices, and have teachers model as well as guide. The structure of the workshop is as follows:

- There is a consistent signal at the beginning of the workshop.
- A direct instruction with mini-lesson is used. The mini-lesson should link to the previous lesson, teach a new writing technique, and allow students to practice the technique. If students have any questions, teachers will help supervise them.

- The mini-lesson is followed by writing time in class. During this time, teachers can meet small groups of students and give them more instructions together with suggestions.
- The class should allow students to share their work with each other.

2. The second iteration

2.1 Explore – Flip – Apply

This model is derived from Ramsey Musallam in 2011. With the traditional concept of the flipped classroom, videos will be given to students to watch and study at home at first, but in this model, students will receive a task at the beginning. They need to help each other to find the answers. Next, the video instruction is used to reveal knowledge and help students better understand the tasks. The video is considered the key to unlock what students feel confused. Finally, students will be able to do their exercises and apply what they have learned from the video to complete the task. To make this model understandable, there are three stages. The first one is "Explore stage". In this stage, a situation, problem, activity, or task is given to students to help brainstorm each other. They need to engage in an exploratory process to discover the knowledge on their own. Teachers do not intervene or help students to complete the activity. After that, students are moved to the second stage called "Flip stage". Once students cannot continue doing the task or they reach the extent of the "Explore stage", the video is utilized. The contents in this video comes from teachers' observation during the previous stage. Teachers will add necessary contents, confirm discoveries, clear up misconceptions, and guide students to be able to move to the next stage. This method helps teachers make the contents more focused. In the last stage or "Apply stage", students have to apply what they have learned from the two previous stages to complete an exercise or assignment given.

2.2 Flip – Mastery

Bergmann and Sams (2012) introduce this model. The basic idea of this model is to let students learn a series of objectives by watching videos and completing assignments at their own pace. In other words, they are working on different activities at different times. They can work individually or in groups. The key components of mastery learning are that firstly, the objectives

of the study must be clear. Teachers should explain what a flipped-mastery classroom looks like and what students should do to attain the objectives. Secondly, teachers should create videos based on objectives which benefit from direct instruction. They may or may not produce their own videos and assure that students can access to videos. There are many ways to provide videos to students such as posting videos online, keeping files on school servers, burning files into DVD, or copying files to students' flash drive. Lastly, teachers should have multiple versions of each summative assessment so that students can demonstrate their mastery learning on assessments. For those who cannot achieve the goals, students have opportunities for remediation. However, Bergmann and Sams (2012) and Cockrum (2014) suggest that to use this model, it requires teachers to be well prepared. They should be content experts who are ready to discuss any topics that students come up with during the class time. Moreover, teachers should be able to keep tracks of what stage each student is in.

2.3 Peer Instruction (PI) Flip

This model is developed by Dr. Eric Mazur at Harvard University in the 1990s. At first, he assigned students to read a lesson in the book before coming to the class to do activities with friends. After that, he decided to add video instruction as a pre-class activity. To follow this model, there are seven steps as listed below:

1. Students are required to read the lesson or watch a video at home.
2. At the beginning of the classroom, questions based on the pre-class activity are given to students to use their high-order-thinking skills such as analyzing or evaluating.
3. Students can use their base knowledge to give answers.
4. Teachers review the answers through a response system.
5. Students are asked to find a friend who answers differently from them. They need to discuss together and explain the reasons why they select their own answer. In this stage, it is very important because students can explore their knowledge and understanding together with practice thinking and determining which answer is correct or wrong.
6. Students are then given time to review their answer and asked again to commit to an answer.

7. Teachers will review the correct answer, provide the explanation, correct the misconceptions, and consider if more teaching is needed at the end of the class.

3. The third iteration

3.1 Project-based learning

This model supports students to use their higher-order thinking skills. They need to create products such as new innovation, student-created videos, blogs, collaborative essays, and presentation (Bergmann & Sams, 2014). To complete projects, students need to use knowledge they have learned and apply to their project. If students are successful to do their project, deep learning and long-term retention have occurred.

The comparison between traditional classroom and the flipped classroom

Traditionally, the education in Thailand is teacher-centered. It is the approach in which students gain knowledge from teachers or books. Teachers are viewed as the center of knowledge. They take responsibility for all the paperwork and organization, make the rules, and post them for students (Garrett, 2008). Moreover, grammar-translation method is used to teach students. Rather than developing thinking skills of learners, teachers prefer rote learning or memorization. They only give a lecture focusing on contents and assign students to do homework on their own. As a result, there is no doubt that students become passive learners. Also, they have few opportunities to interact with teachers and friends (Hilado-Deita, 2015).

However, traditional way of teaching has both advantages and disadvantages. To mention about advantages, Al-Zu'be (2013) stated that the classroom will be in order and quiet because teachers control everything in the classroom. It can help students concentrate on what they are learning fully. Moreover, teachers are the leaders who choose suitable and necessary topics for students to learn. They are also experts in particular fields who have in-depth knowledge to deliver to students. For disadvantages, this approach does not support students to be active learners. Students cannot think critically, learn, or solve any problems properly. They merely listen, memorize, and absorb information from teachers without initiating or negotiating the outcomes of the learning process. Consequently, students are not ready to be independent learners who can make decisions, be responsible for improving their own language skills, and

promote their lifelong learning, which is considered important skills to live in the 21st century (Swatevacharkul, 2014).

Unlike grammar-translation method, the flipped classroom is student-centered, which provides an opportunity for students to take responsibilities to learn contents from a wide range of materials by themselves at home and come to the classroom with some knowledge. The role of teachers is changed. Instead of being the leaders, they act as facilitators, coaches, or advisors for students. In the class, teachers can start the class with warm-up activities and asking questions related to the video(s) students have watched at home. After that, the time is devoted to doing more activities to develop students' thinking skills together with problem solving skills, and understand the contents in detail. Students have a chance to work in group and express their opinions freely, whereas teachers spend time clarifying any confusing points to students (Thaichay & Sitthitikul, 2016).

According to Rhode (2015), Thaichay and Sitthitikul, (2016), the gist of the traditional classroom and the flipped classroom is compared and shown in Table 1.

	Traditional classroom	Flipped classroom
Before class	- Students are assigned to read something. - Teachers prepare the materials to be delivered in class.	- Students learn the contents from the video(s) and prepare themselves for the class activities. - Teachers provide video clips or reading materials to students and prepare active learning activities.
During class	- Students listen to the lecture and take notes. - Teachers are sage on the stage. - Teachers introduce new contents. - Teachers assign homework.	- Students practice applying key concepts they have learned and develop their higher-order thinking. - Teachers are guide on the side. - Teachers answer students' questions and help them to understand the contents.
After class	- Students put an attempt in their homework.	- Students check their understanding and extend their learning to more complex tasks.

Table 1: The comparison between the traditional classroom and the flipped classroom

In addition, Bergmann and Sams (2012) point out the differences between duration used in the traditional classroom and in the flipped classroom. Supposing that teachers have 90 minutes to teach students in the traditional classroom, the first 5 minutes is for doing warm-up

activity, and 20 minutes is for explaining what students do not understand in previous homework. The next 30-45 minutes is for presenting new contents to students. The rest of the time around 20-35 minutes is for suggestions and independent practice. Regarding the flipped classroom, 90 minutes is divided into doing three main activities in the class. It begins with the warm-up activities for 5 minutes. Then, there is a 10 minute-discussion between students and the teacher on the video that they have watched. This stage aims to clear up misconceptions before moving to next activities. Finally, the 75 minutes remaining is devoted to group discussion and working on project. The comparison of the class time between the traditional classroom and the flipped classroom is presented in Table 2.

	Activities and Time Allotment			
Traditional classroom	Warm-up activity (5 min.)	Review previous homework (20 min.)	Lecture new contents (30-45 min.)	Guided and independent practice (20-35 min.)
Flipped classroom	Warm-up activity (5 min.)	Q & A time on video (10 min.)	Guided and independent practice (75 min.)	

Table 2: The comparison of the class time between the traditional classroom and the flipped classroom (Bergmann & Sams, 2012)

Advantages and disadvantages of the flipped classroom

The flipped classroom provides both advantages and disadvantages. A number of researchers point out advantages of the flipped classroom as follows:

1. Students can learn at their own pace. It means that they can take time to go over all materials and comprehend the contents as much or as little time as they want for better understanding anywhere and anytime. Stress levels are also reduced since they have freedom to read and listen again (Lockwood, 2014; Roehl, Reddy, & Shannon, 2013; Hamdan, McKnight, McKnight, & Arfstrom, 2013).
2. Instructors have more control of class time. They do not need to allot time for lecture or face the concern that they did not cover all contents in class because they give a lecture and post it online. Teachers can use valuable time in the classroom to help

students apply those concepts, guide learning and make the classroom more meaningful for students (Lockwood, 2014).

3. The flipped classroom improves students' performance. It can be inferred that using the flipped model is beneficial for students because they learn the contents at home and come to the classroom with some knowledge. They can apply contents and work better on activities in the classroom. As a result, students not only improve their grades, but also increase their critical thinking and language skills (Egbert, Herman & Lee, 2015; Hung, 2015; Lockwood, 2014; Hamdan, McKnight, McKnight & Arfstrom, 2013).
4. The flipped classroom reduces tedium and increases interaction. Normally, students feel bored when teachers give a lecture in the classroom. When the flipped classroom is now applied, the classroom is full of interaction. Group work and projects are used to let students interact more (Lockwood, 2014).
5. The flipped classroom builds good relationship between students and teachers. When students struggle to apply what they have learned to their assignments, teachers are available to help them in the classroom. This can build good rapport between them (Bergmann & Sams, 2014; Lockwood, 2014; Cockrum, 2014; Roehl, Reddy & Shannon, 2013; Bergmann & Sams, 2012).
6. The flipped classroom supports various materials such as realia or authentic materials used in real life, websites and applications. Preparing materials for teaching and learning is not teachers' job only. Students can also bring their own materials or share them to others. This way can help them know how to choose relevant materials of their interest for other classes or future careers (Lockwood, 2014; Roehl, Reddy, & Shannon, 2013).
7. The flipped classroom benefits absent students and busy teachers. When students miss the class owing to illness or being athletics of the universities, they can go back and study the contents from the videos. It helps them to follow up and understand the lessons as their friends do. Similarly, it is beneficial for teachers. Although teachers are absent, they can move the lessons forward without delay (Cockrum, 2014; Roehl, Reddy, & Shannon, 2013; Bergmann & Sams, 2012).

On the contrary, there are some drawbacks of the flipped classroom below.

1. Students who are familiar with the traditional teaching may resist to this new model. It may take time to make students understand why the class is flipped (Bergmann & Sams, 2012; Herreid & Schiller, 2013; Lockwood, 2014; Strayer, 2007).
2. It is time-consuming to prepare and develop new activities to do in the classroom. Generally, prerecorded videos are used in the flipped classroom. So, teachers who are interested in flipping the classroom may spend their time recording their own lectures (Enfield, 2013; Bergmann & Sams, 2012; Lockwood, 2014).
3. During watching the videos, students cannot ask questions that come to their mind immediately, and teachers may concern about student participation whether students watch the videos or not (Bergmann & Sams, 2012).
4. Not all students are able to access to the high-speed Internet or computers to learn the contents. Those who lack technological equipment will be disadvantaged (Hamdan, McKnight, McKnight, & Arfstrom, 2013).

Flipping English classrooms in the 21st century

Living in the world changing rapidly, people must be ready to adapt themselves to the new environment. When the world is changed, education systems need to adapt and change as well. New innovation and technological advances have an impact on the way people communicate, learn, and work. In response to this change, teachers should prepare students to have essential skills in 21st century such as life skills, learning skills, and technology skills (Partnership for 21st Century Skills, 2009).

Regarding life skills, today's life at the workplace requires more content knowledge. Flexibility, adaptability, self-direction, social skills, and responsibility are needed skills. Learning skills refer to creativity, critical thinking, communication, and collaboration. Technology skills mean to have the ability to use digital technologies to access, research, and evaluate information effectively.

To enable students to learn and have these skills, teachers can integrate these skills into the teaching of the core subjects such as English. Teaching English in the past is to emphasize

teaching language from textbooks with rote memorization, which is not practical and helpful for students' working life. As a result, students probably miss the opportunities to get a job because they lack necessary skills such as problem-solving or collaboration for the workforce (Wangkiat, 2019). It is time for teachers to emphasize student-centered learning, which provides students opportunities to have their voice and choice, express their opinions confidently, work in groups, and integrate technology as part of the course. The flipped classroom can be one innovative teaching approach that can support preparing students for the 21st century workforce. It is not a new phenomenon, but it responds to the changing world, especially in the current situation of COVID-19. Unexpectedly, all teachers and students need to have a live online class. This situation proves that technology has an important role to play. People cannot avoid depending on technology in their everyday lives, including education. The flipped classroom could be an appropriate instructional approach used in any situations to help maximize student learning time and allow students to engage more in all activities. Also, the embedded 21st century skills in the flipped classroom are so beneficial and essential to modern students who are digital natives.

Related studies regarding the flipped classroom

The flipped classroom has been implemented in English language classrooms for years. Previous studies showed that the flipped classroom revealed positive outcomes and some concerning issues as presented as follows:

First, Yujing (2015) investigated the influence of the flipped classroom on learner's empowerment in English writing courses in China. The participants were 70 English-major students. They were divided into two groups. Group A was the experiment group (the flipped model). Learners were assigned to watch English writing videos at home and then came to share what they learned through such videos in the classroom. Group B was the control group (the traditional teaching model). Learners were required to finish certain tasks, review and consolidate what they learned from the lecture in the classroom. The results indicated that there was significant difference between the experiment class and the control class. The flipped classroom had an effect on students' learning process. Students from the flipped classroom were more competent and responsible. They felt confident in their writing ability and were active for further learning. Also, they felt that the assignments in the classroom were meaningful and valuable. Therefore,

Yujing concluded that the flipped classroom can promote students' perception of empowerment better than a traditional classroom can.

Second, Ahmed (2016) determined the effect of the flipping classroom on writing skills in English as a foreign language and explored students' attitude towards the flipped classroom. The participants were 60 undergraduate female students of Qassim University from English writing class. They were divided into two groups: 30 students for the experimental group and 30 students for the control group. The results pointed out that students from the experimental group taught through the flipped classroom outperformed students from the control group taught with the traditional way in the writing posttest. They improved their writing skills in terms of ideas and content, organization, voice and style. Also, the flipped classroom empowered active learning. It allowed students to engage in their learning process at their own pace. With the flipped approach, students felt more motivated, independent and confident. It also helped promote learner autonomy.

Third, Herlindayana, Sahlan, and Alberth (2017) attempted to study the effect of the flipped classroom on students' reading comprehension. There were 32 students participating in this study. The results showed that students' reading comprehension was improved after the implementation of the flipped classroom, and most students were satisfied with this learning approach. The flipped classroom provided opportunities for students to learn anywhere and anytime, which had a good impact on students' understanding towards the lessons before they participated in the class. Consequently, students had more time to work collaboratively with friends and help one another to solve any problems in the class intentionally. Besides, students transformed from passive learners to be active learners and took their own responsibilities for their learning. However, there were some students who were not happy with the flipped learning environment. They claimed that they felt frustrated when they had questions during watching the videos. Therefore, teachers should concern about the contents in the videos and make sure that students can learn from other materials, not from videos only.

In Thailand, there have been the researchers interested in implementing the flipped classroom in English classrooms. For example, Wei and Sukavatee (2019) examined the effects of debate instruction using a flipped classroom to develop students' critical thinking skills. The sample was 24 high school students from English programs and bilingual programs in Bangkok.

The results revealed that after the treatment of 9 weeks, students could improve their critical thinking skills in terms of inference, recognition of assumptions, deduction, interpretation, and evaluation of arguments. It is due to the flipped leaning environment which allows students to learn the contents from the videos and prepare themselves before the class starts. The flipped learning environment is also flexible for students to learn. Students can learn the contents at their own pace with any available tools and foster deep understanding towards the topics. Furthermore, students had positive attitudes towards the use of the flipped classroom. They claimed that the learning with the flipped learning environment was not stressful and helped them to think more critically and enhance them to have more confidence.

Another study was conducted by Chavangklang and Suppasetseree (2018). They developed the Flipped Cooperative Classroom Model (FCCM) to improve reading comprehension ability. The participants were two groups of students majoring in English: 37 students for a control group and 34 students for an experimental group. After the treatment, it was found that the experimental group improved reading comprehension better than the control group. Moreover, students were satisfied with the flipped model. They mentioned that with this flipped model, they could prepare themselves before participating in the class. It helped them to have better understanding about the topics. Also, the learning platform "Moodle" was easy to use and convenient to do exercises anywhere and anytime. However, some students claimed that learning the contents through the mobile phone did not give the sense of learning. It was considered playing instead.

In addition, Santikarn and Wichadee (2018) assessed the effectiveness of the flipped classroom and explored students' perception towards the flipped classroom. The sample consisted of 40 students from a private university in Thailand. They enrolled in an advanced English course. The results showed that students' English scores were satisfying. Students had positive perceptions on the flipped classroom. Most students claimed that the video clips of lecture were very helpful for them. In addition, learning in the flipped classroom allowed students to have more responsibilities and foster being autonomous learners. Moreover, students' innovation, creativity, active participation, and collaboration were improved. With the satisfying results, the flipped classroom should be implemented in any courses. However, the researchers recommended that teachers should have sufficient time to create the video clips since it was

time-consuming. Furthermore, teachers should carefully select the convenient and user-friendly platform to post all videos and announcements and communicate with students.

Conclusions

In the light of the literature review, the flipped classroom is an interesting instructional approach in the 21st century. Teachers can start from considering and selecting the appropriate model of the flipped classroom to match the objectives of the course and support students to improve their contents and necessary skills for this era. Of all six models of the flipped classroom categorized by Cockrum (2014), writing workshop flip is totally different from others. It seems to focus on writing skills only. The rest of all models shares the same features. That is to say they consist of two main parts: in class and out of class activities. Generally, students watch the videos at home and do activities in the class without being informed about the task to complete. However, there are some different parts in each model. For example, in the model "Explore – Flip – Apply" students are given the task at the beginning. Then they can find more answers in the video. Lastly, they need to use what they gained from the first two stages to complete the assignment. For the model "Flip – Mastery", it is like differentiation. In other words, students can learn at their own pace. They do not need to wait for their friends and follow the timeline set by teachers. The goal is to let students attain the objectives of the course. Next, the model "peer instruction or PI flip" seems to emphasize discussion between students in the classroom. Finally, the model "project-based learning" requires students to create the project as the final product of the course. Although all six models of the flipped classroom have different steps, they support students to take time to discuss and help one another to complete the assignments and increases collaboration among groups.

According to the previous studies conducted by Yujing (2015), Ahmed (2016), Herlindayana (2017), Chavangklang and Suppasetseree (2018), Santikarn and Wichadee (2018), and Wei and Sukavatee (2019), it proved that the traditional flip has been the most widely used model for teachers to start flipping the classroom in their country. Learning in the flipped classroom support students' thinking levels. Based on the learning process of Bloom's Taxonomy, activities out of class promote remembering and understanding (lower-thinking), while activities in class enhance

applying, analyzing, evaluating and creating (higher-thinking) which are considered necessary skills for deeper learning in the 21st century.

To compare the benefits and drawbacks of the flipped classroom, the advantages obviously outweigh the disadvantages. The flipped classroom helps promote autonomous learning, active learning, using technology and authentic materials, and building relationship between students and teachers. However, there are challenges to implement the flipped classroom. To overcome them, teachers firstly need to explain what they are going to do and why they are going to flip the class. If students understand it, they will not have problems to learn subjects with the flipped model. Moreover, integrating technology in or out of class is not a big issue for students since they are digital native who are fluent in the digital language of computers, video games, video cams, cell phones, the Internet as well as all the other tools of the digital age (Prensky, 2001). Teachers should take this opportunity to facilitate the students to learn English by using computer materials for language teaching. Regarding creating the videos for lecture, Bergmann and Sams (2012) suggested that at the beginning, teachers can use other teachers' videos to save time for recording their own videos. A number of videos are growing. Teachers can select videos from YouTube and other video sharing sites. However, if teachers prefer creating their own videos, there are many programs provided to record videos such as Camtasia, Educreations and Screenr.com (Bretzmann, 2013) and Zoom (Sayem, Taylor, Mcclanachan, & Mumtahina, 2017). Moreover, to make it more interesting, teachers do not need to record their videos every time. They can use podcasts as learning materials as well. Next, to check whether students watch the videos and learn the contents at home or not, teachers can give a quiz or an exercise to monitor student participation. Another way is to let students take notes, summarize the contents and prepare questions to ask friends or teachers in the classroom.

Finally, it is undeniable that currently technology plays a vital role in teaching and learning. No matter where students learn, students could still develop their language knowledge and other essential 21st century skills through the environment of the flipped classroom in both the on-site class and the live online class via Zoom, Google Meet, or Microsoft Teams. Therefore, it is recommended that the flipped classroom including the use of technology could be an appropriate instructional alternative to create the meaningful classroom, improve students' language knowledge, and foster students' necessary 21st century skills.

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