

CHAPTER 2

LITERATURE REVIEW

This chapter presents a brief explanation of some theories that support the study. The theories are related to Flipped Classroom Model (FCM), students' cognitive engagement, and EFL classroom.

2.1 Theoretical Framework

2.1.1 Definition of Flipped Classroom Model

The Flipped Classroom Model (FCM) is a blended learning method that reverses the traditional teaching approach. In FCM, students receive learning materials and assignments that must be completed before class begins, often through specific online platforms. This enables students to gain an initial understanding of the topics to be covered. In the learning activities, the lecturer's role shifts towards providing additional explanations and facilitating discussions to help students reflect on their comprehension of the previously studied material. The remaining class time is devoted to in-depth practical activities related to the topic under study. In FCM, students are required to be able to learn independently and take center stage in the learning process, with the teacher assuming the role of a facilitator who guides understanding and application of the material. This fosters a more interactive learning environment and offers opportunities for greater student engagement in the learning process (Reidsema et al., 2017).

The flipped classroom learning approach primarily depends on the utilization of various operational digital technologies and tools. These technological resources play a crucial role in facilitating the pre-

class delivery of learning materials and assignments to students, often through online platforms. Additionally, they allow students to engage with the content independently before the actual class session (K. Wang et al., 2023). As stated by (Loizou (2022), the use of digital tools in the flipped classroom model supports the interactive aspect of class activities, allowing students to actively participate in discussions and practice exercises guided by the instructor. Overall, the integration of digital technologies enhances the effectiveness of the flipped classroom approach by promoting student engagement and self-directed learning (Khodaei et al., 2022).

Thus, it can be concluded that the FCM offers an innovative learning method by effectively utilizing digital technology and its tools. In this model, the teacher's role shifts from being the primary presenter of the material to becoming a facilitator who guides students' understanding and application of the material. The integration of digital technology not only facilitates the delivery of learning materials before class but also enhances student engagement and fosters independent learning. Therefore, the FCM opens up opportunities to create a more interactive and responsive learning environment tailored to students' needs in understanding the material.

2.1.2 Principles of Flipped Classroom Model

The Flipped Classroom Model (FCM) combines learning principles with modern technology to create innovative and well-organized learning experiences. In FCM courses, asynchronous activities are typically completed by students through an online platform, allowing them to participate in the same activity at different times. Therefore, learning with FCM is very flexible. Through various

online platforms, students can watch learning videos, conduct experiments, group assignments, and assessments in a variety of ways. The main principle of FCM is the incorporation of technology, which aims to provide a more interpersonal learning experience and provide an alternative for students who have difficulty managing time and understanding the material. With selected technology delivering materials before class, students can keep up with course material and have more flexibility with their schedules compared to traditional learning. (Reidsema et al., 2017).

There are four steps in the Flipped Classroom Model (FCM) based on the theory of Bergmann and Sams (2014). Here are the steps:

1. Content Creation

Before adopting the Flipped Classroom Model (FCM) approach, educators need to prepare learning content first. One commonly used form of content is videos that discuss the material. These videos can be created by educators themselves or adopted from other sources for implementation in FCM classes. However, educators who want to use self-made videos as learning media in FCM classes need to consider several factors. Firstly, the video's duration should be short and engaging, with added elements of humor if possible. Adding annotations, caption balloons, zooming in and out, and ensuring content remains copyright-compliant are also crucial aspects. Besides videos, there are various tools that can support the creation and recording of videos for learning media purposes, such as screen casting software, annotation tools, digital whiteboards, microphones, webcams, and recording software.

2. Pre-class Learning

At this stage, students have the responsibility to learn the material and complete the assignments that have been given before

the class schedule. This independent learning allows them to gain a basic understanding of the material being studied, thereby creating different starting points for discussions during in-class activities.

3. In-class Activity

Class time is no longer dominated by the teacher like the traditional approach. Instead, it becomes an interactive class. Educators simply facilitate discussions, engage students in collaborative projects, and meet individual learning needs. This stage emphasizes the application of knowledge and fostering deeper understanding through active participation.

4. Assessment

Assessment in the FCM model employs a combination of formative and summative assessments. There is no use of paper-based worksheets in FCM class assessments; instead, all forms of assessment are integrated with technology. This makes the assessment process fast and efficient.

In FCM classes, formative assessments are utilized to monitor students' progress as they independently study before and during class sessions. Formative assessments not only detect misconceptions but also provide direct guidance according to student needs. The principle of student responsibility in learning is emphasized, where students are not only given objectives and resources but are also asked to prove their understanding of the learning objectives. If a student encounters difficulties, educators quickly discuss and develop a remediation plan based on individual needs. Thus, in the FCM classroom, assessment becomes a tool that not only measures final achievement but also fosters a deep understanding and development of students' abilities.

In the context of summative assessment, which aims to demonstrate student mastery of the main learning objectives, there are various methods that can be applied. The process of determining evaluation scores is rooted in achievement of learning objectives, while scores below average lead to remediation actions being provided. This assessment method provides flexibility, allowing the selection of the method that best suits the student's needs and characteristics.

2.1.3 Challenges and Benefits in Flipped Classroom Model

The Flipped Classroom Model (FCM) brings various challenges in its implementation. According to Vuong et al. (2018, p.1505), they said that one big challenge is related to students' resistance to a totally new teaching mode. Students have become familiar with traditional lecture methods and find it initially struggled to adjust to an innovative teaching style with new routines, responsibilities and expectations. Apart from that, students can also feel stressed and burdened to complete assignments before the class session starts. This pre-class preparation can have a negative impact on student satisfaction levels (Vuong et al., 2018). Another challenge is that when students ask questions during pre-class activities, they may not get answers immediately. Students must be patient and wait a while before getting a response (Han et al., 2023).

Despite several challenges faced, there are also various opportunities for implementing the flipped classroom model. Firstly, the flipped classroom model helps make the most of technology. Considering that today's students grow up with abundant internet access and technology, the use of FCM is very important because it integrates technology into learning. However, it needs to be acknowledged that

there are still some students who may have limitations in understanding the use of technology. Therefore, implementing FCM in the classroom can be an effective means of introducing and studying technology in the classroom learning process. Second, help busy students. Nowadays students are very busy, whether taking part in several programs or attending events. Then, students will highly appreciate the flexibility of learning. Using FCM will help students because the material and assignments given before class can be accessed anytime and anywhere. Apart from that, students can also pause or rewind their learning independently. Lastly, FCM increases student engagement significantly. Through materials provided through online platforms, teachers can encourage students to reflect on their understanding during class. This encourages students to participate actively in class discussions. Additionally, when practicing in class, either individually or in small groups, students naturally develop critical thinking skills and apply their understanding to assigned tasks (Bergmann & Sams, 2014).

2.1.4 Definition of Students Cognitive Engagement

Student cognitive engagement is the level of active student involvement in the process of thinking, processing information, and understanding lessons. This includes the ability to solve problems, analyse and apply the knowledge students learn. Students' cognitive engagement involves their active and effective participation in the learning process and completion of assignments by utilizing their cognitive abilities. Improved student learning and motivation in the classroom are key factors of student cognitive engagement. An example of cognitive engagement that illustrates students' active involvement in the learning process and the use of cognitive processes and strategies to

understand and apply knowledge in class is when students actively participate in discussions, ask questions, and critically analyze the information presented to them. They may also engage in higher-order thinking tasks, apply problem-solving strategies, and make connections between different concepts (Corno & Mandinach, 1983).

The impact of cognitive engagement in the English classroom has positive results. In research conducted by Al-Obaydi et al. (2023), they pointed out that cognitive engagement achieved very positive results in relation to structured feedback between the two others. This result demonstrates that leading students to think in an online class can play a role in increasing their engagement, specifically cognitive engagement. Thus, cognitive engagement in English as a foreign language (EFL) courses has shown positive results, especially through the application of structured feedback. Guiding students to think actively in the classroom can increase their participation, including cognitive growth, formation of knowledge structures, understanding, and problem solving. These processes are closely related to the implementation of structured feedback. Furthermore, active teaching involves students actively in learning, including connecting new information with previous knowledge. Teachers provide or review material at the beginning of each lesson to help students remember and master the material better, ensuring they not only receive the lesson but are able to organize and relate new information to previous knowledge.

2.1.5 Indicators of Cognitive Engagement

Cognitive engagement cannot be separated from the indicators proposed by Halverson and Graham (2019). They proposed six indicators of cognitive engagement in learning, namely attention, effort

and persistence, time on task, cognitive/metacognitive strategies, absorption, and curiosity. The following is an explanation of each cognitive engagement indicator from the Halverson & Graham (2019):

1. Attention

Attention is the ability to focus on processing the information received and shows that students involve mental effort in the learning process. This is the first stepping-stone to motivate learning.

2. Effort and Persistence

Effort is the exertion of mental energy and active involvement in the learning process. Meanwhile, Persistence is the willingness to continue doing a task even though there are challenges. So, efficiency and persistence are the energy exerted to carry out a task.

3. Time on Task

The amount of time spent by students actively engaged in learning activities or tasks is the definition of time on task.

4. Cognitive/Metacognitive Strategies

Cognitive/metacognitive strategies are conscious or deliberate mental processes to improve learning and problem-solving abilities. Cognitive strategies Techniques used to help someone process and process information well. This can be done by using a special approach, namely organizing information, summarizing, or linking new knowledge with previous knowledge. Meanwhile, metacognitive strategies are techniques that involve a person's ability to monitor and regulate thought processes with their own understanding. Examples are planning, self-reflection, and self-evaluation.

5. Absorption

Absorption is a condition where an individual is so focused on completing a task and is fully involved in an activity that he loses track of time. This is characterized by individuals experiencing emotional engagement. The emotions felt are divided into two, namely positive emotions (enjoyment, happiness, and confidence) and negative emotions (boredom, frustration, and anxiety).

6. Curiosity

Curiosity is a strong desire to explore, seek new information, and understand the unknown. This includes interest and drives to gain knowledge or solve problems. Curiosity often leads to investing mental effort and engaging in active search and exploration.

2.1.6 Definition of EFL Classroom

EFL classroom is an acronym for "English as a Foreign Language Classroom", where students are placed at the center of the learning process (Ortin & Mayor, 2020). It is an educational environment in which students learn and practice English as a second or foreign language. EFL classes are usually found in countries where English is not the primary or official language. The main aim of the EFL class is to help students achieve competence in English so that they can use this language fluently and effectively. Teachers and students in EFL classrooms are expected to communicate in English to familiarize students with the practical use of the language. In doing so, EFL classes create an environment where students can actively experience English, helping them achieve their language goals (Alicia, 2018).

In the EFL classroom, various problems often arise, one of which is that students are silent in class. According to Kandila et al. (2021, p.20), they noted that "... students' silence often becomes a problem in the classroom context". Therefore, it is important to find ways to overcome this problem. One of the recommended approaches, proposed by Yulianti and Wulandari (2021), is the application of the Flipped Classroom Model in EFL classes to increase cognitive engagement. Their research shows that this improvement is visible when during discussions in class, students actively express their opinions.

In overcoming student silence in English as a Foreign Language (EFL) classes, the Flipped Classroom Model (FCM) approach has begun to be implemented in the Technology Enhanced Language Learning course at the English Education Department (EED) at one of University in Tasikmalaya. This TELL course aims to explore the effectiveness of using technology in improving language learning. The use of FCM is not only useful for improving input quality, creating authentic communication, and providing timely and relevant feedback (Shadiev & Yang, 2020), but also for encouraging students' active involvement in the learning process. In TELL, the Flipped Classroom approach can be enhanced through the use of online platforms, instructional videos, and interactive software. Teachers can create learning materials that can be accessed online before class, such as video lessons, simulations, or interactive activities using language learning applications and software. Thus, students can prepare themselves before class, increase their cognitive readiness, and more actively participate in class discussions (Namestovski & Kovari, 2022). By integrating the Flipped Classroom Model with the TELL strategy, it

can create a more dynamic and interesting learning experience, which encourages students to more actively participate in the English learning process, and in turn, can help overcome the problem of student silence in the EFL classroom (Zain & Sailin, 2020).

2.1.7 Principles of EFL Teaching

By applying the principles of effective learning in the EFL classroom, students can more easily master the language and be more actively involved in learning activities. Al-Ghazo and Ta'amneh (2021, P.18) stated that teaching principles play an important role in facilitating students to gain good language mastery and increase their engagement in learning activities in the classroom. Therefore, teachers should consider using the principles of teaching that were suggested firstly by Brown (2007). These include cognitive principles, linguistic principles, and affective principles.

1. Cognitive Principles

Cognitive principles in language learning emphasize the role of cognitive processes, or thinking, in understanding, processing, storing, and using language information. It includes various mental activities such as recognizing language patterns, understanding grammatical structures, and applying language rules in communication. This cognitive process is often carried out automatically and is not realized by the individual. In language teaching, cognitive principles emphasize the importance of teaching strategies to help students process and understand language effectively. This includes teaching reading, listening, and speaking strategies, as well as teaching critical and analytical thinking skills for understanding and using language.

2. Linguistic Principles

Linguistic Principles focus on understanding and applying language rules, structures, and features in language learning. This involves understanding grammar, vocabulary, pronunciation, and contextual and communicative conventions in language use. Teachers play a role in helping students understand the structure and function of language, expand vocabulary, and develop communicative skills. In teaching grammar, this principle emphasizes the importance of providing clear explanations and relevant examples as well as providing appropriate exercises to improve students' understanding of language rules and patterns.

3. Affective Principles

The affective principle emphasizes the emotional, motivational and psychological aspects of language learning. It includes factors such as motivation, self-confidence, anxiety, interest and attitudes towards language learning. The importance of this principle lies in motivating students to learn a language with enthusiasm and confidence, as well as creating a learning environment that supports and stimulates their emotional growth. Teachers play a role in providing positive feedback and building relationships with students so that they feel safe and comfortable taking risks in language learning. This principle also emphasizes the importance of paying attention to students' individual needs in language learning and adapting to differences in learning styles, interests and talents.

Through the comprehensive application principles of teaching in EFL classroom, teachers can create valuable learning experiences for

students that enable them to develop strong language skills while feeling comfortable and supported in the learning process.

2.2 Study of the Relevant Research

Regarding the implementation of the flipped classroom model (FCM) on students' cognitive engagement, several studies highlighted this issue in their research (Ammade et al., 2023; Gustian et al., 2023; Alebrahim & Ku, 2020). They conducted their studies with different focuses.

In the previous research conducted by Ammade et al. (2023), the focus was on measuring the impact of the Flipped Classroom Model (FCM) on students' cognitive engagement on academic performance, especially in the context of writing in English. The research results showed that the use of FCM improved students' academic performance. Apart from that, regarding students' cognitive engagement, they found that FCM posed several challenges, resulting in not having a good impact on students' cognitive engagement. However, students' cognitive engagement still needed encouragement. Furthermore, Ammade et al. (2023, p. 107) suggested that "flipped classroom will show its effectiveness in educational context if it is well prepared and well-exposed. Teacher's creativity, active students, parents' awareness, well-prepared classroom are contributing factors of flipped classroom's success." This indicates that the use of FCM played an effective role in increasing students' cognitive engagement, but still needed attention to various factors.

Apart from that, research conducted by Gustian et al. (2023) also explored the use of the flipped classroom model (FCM) for English as a foreign language (EFL) learner. However, the focus of the research is on

the benefits obtained. The research results show that FCM has a positive impact in reducing student anxiety, increasing student self-efficacy and critical thinking abilities, developing student independence, increasing student learning motivation, increasing student satisfaction, and encouraging new learning paradigms from teachers. It is teacher-centered, student-centered, and encourages active and collaborative learning.

On the other hand, Alebrahim and Ku (2020) focused on investigating the benefits and challenges of FCM on students' behavioral, cognitive, and affective engagement. The results of this research highlighted the benefits and challenges in behavioral aspects (such as student effort, participation in activities, and compliance with tasks) and affective (such as student preferences and level of satisfaction) rather than cognitive aspects (such as understanding concepts, processing information, and applying knowledge).

In the FCM theory proposed by Bergmann and Sams (2014), significant changes in learning sequences are emphasized. This approach proposes that learning materials and assignments be given before the class is held. Class time is then used to deepen understanding and participate in activities that deepen students' understanding. This approach gives students greater control over their learning process, allowing educators to provide more in-depth guidance in the classroom context. Meanwhile, the concept of student cognitive engagement, as theorized by Halverson and Graham (2019), includes six main factors: attention, effort and persistence, time on tasks, cognitive/metacognitive strategies, absorption, and curiosity. This theory views cognitive engagement as a complex interaction between students' mental activities in the learning process, including information processing, problem solving, and the development of deep understanding.

This approach was later expanded by Corno and Mandinach (1983), who emphasized the importance of the relationship between cognitive factors and students' mental activity in achieving optimal cognitive engagement.

In this context, FCM and students' cognitive engagement are interrelated. FCM enables increased student cognitive engagement by giving students control over their attention, effort, and persistence. In addition, the time allocated in class allows students to apply cognitive and metacognitive strategies, as well as deepen their understanding through direct interaction with the material and discussions with their peers. Thus, through this approach, students can achieve higher levels of cognitive engagement, which in turn enriches their overall learning experience. The Venn diagram below illustrates the relationship between FCM and cognitive engagement:

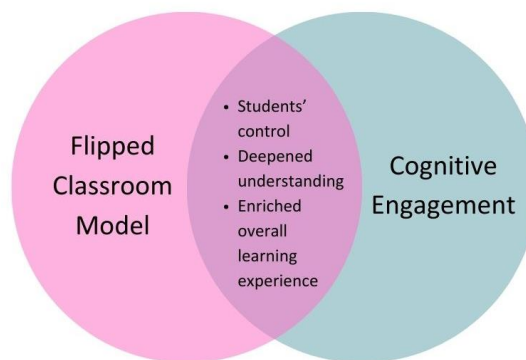


Figure 1 *The Relationship Between the Flipped Classroom Model and Cognitive Engagement*

The explanation regarding the intersection between FCM and students' cognitive engagement is in line with previous research conducted by Ammade et al. (2023), who investigated the impact of the flipped

classroom model on students' cognitive engagement. Their research results showed that the flipped classroom model gave students more control over their learning process, leading to a deeper understanding and a richer learning experience overall. The Venn diagram above illustrates the relationship between FCM and cognitive engagement. As shown in the diagram, the flipped classroom model provided a number of key benefits, including increased student control, deeper understanding, and a richer learning experience. This was in line with the findings of Ammade et al. (2023), who asserted that when students were given more control over their learning, they became more cognitively engaged. Furthermore, the research showed that integration of the FCM could enrich the overall learning experience, supporting the theory that this approach not only increased cognitive engagement but also improved learning outcomes.

Judging from the research results mentioned previously, some only discussed the benefits of the flipped classroom model on students' cognitive engagement, some only discussed the challenges, and some did not even discuss these two aspects in depth. Therefore, this research focused on an in-depth investigation of the challenges and benefits of the flipped classroom model on students' cognitive engagement.