

# Flipped Classroom Model For EFL/ESL Instruction in Higher Education: A Systematic Literature Review

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## ABSTRACT

**Background.** Researchers and teaching practitioners are working on formulating instructional approaches that suit the students' interests by incorporating the latest technology. The flipped classroom model emerges as an alternative to extend the classroom interaction, create a different atmosphere, and accommodate a meaningful and collaborative interaction in the class.

**Purpose.** This paper aims to present a systematic review of past studies focusing on the implementation of the flipped classroom for EFL/ESL instruction in higher education.

**Methods.** A total of 29 articles were selected using specific criteria comprising year and types of publication, contexts, and the determined quality standard. The collected articles were then analyzed to reveal the research components including the research designs, participants, and instructional tools.

**Results.** This study presents a discussion of the practical instructional benefits of the flipped classroom model and the possible barriers.

**Implications.** Furthermore, from this discussion, this study formulated pedagogical and research implications for possible directions in future studies.

## KEYWORDS

flipped classroom model, ESL/EFL, systematic literature review

## INTRODUCTION

The concept of Flipped Classroom Model (FCM) was first introduced by Lage, Platt, and Treglia (2000) referring to the idea of the inverted version of the traditional classroom (Lage, Platt & Treglia, 2000; Deng, 2019). Since then, this concept has attracted more attention as Bergmann and Sams (Milman, 2012) integrated the latest technology into the concept that was later recognized as FCM. The continuous development of educational technology has triggered various innovations that transform the face of traditional teaching approaches. Nowadays, it has also received an increased research interest in various disciplines along with the emergence of online educational platforms such as Moodle, Khan academy, and Ted (Gaughan, 2014).

FCM reverses what is practically done in a traditional class as learning content is taught outside the classroom while the

regular take-home assignments are discussed in the classroom. Zhang (2019) asserted that FCM serves as an innovative teaching approach that incorporates conventional classroom and computer network technology. It can be made possible with technological assistance that enables students to access the learning content from available online learning platforms through internet-connected computers or mobile devices (Jensen, 2019). Additionally, students can be optionally assigned to work in small groups to discuss the content as the instructor monitors their work progress (Bergmann & Sams, 2012). Abeysekera and Dawson (2015) explained that the approach promotes a socially collaborative learning setting representing actual face-to-face learning through digital assistance. Thus, instructors can draw benefits in terms of time management as they can optimize the classroom meeting to discuss pre-delivered learning content (Halili & Zainuddin, 2015, Karami, 2021).

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Along with the increased popularity of the approach, English as a Foreign Language/ English as a Second Language (EFL/ESL) teaching practitioners and researchers are now crafting a way to incorporate this approach for effective EFL/ESL instructional practices. Previous studies were carried out with a primary focus on the development of students' linguistics skills (e.g. Wu et al., 2017; Lin et al., 2018) while others highlighted the effects of this approach on students' learning motivation (e.g. Yu & Yu, 2017; Cabi, 2018), self-directed learning (e.g. Zainuddin et al., 2019), and students' learning perception (e.g. Hung, 2017; Chen Hsieh et al., 2017). These results attributed to the practicability and potential of this approach confirming a broader extent of learning engagement for enhancing students' subject-matter EFL/ESL learning.

Currently, various resources from the internet such as blogs, vlogs, notes, and briefs have been mainly used as the main references for applying FCM, especially for EFL/ESL contexts. Only a limited number of scientific papers are serving as a reference for an organized and systematic application of this approach. Accordingly, this paper aims to review the previous studies of FCM with an in-depth investigation of the key elements that determine the effectiveness of this approach. The following questions are addressed to cover an extensive range of literature dealing with the research topic and to serve as the outline of this review: (1) What is the theoretical framework used to design FCM? (2) What are the research methodologies and technological tools used to conduct studies of FCM? (3) What are the practical instructional benefits of FCM? (4) What are the barriers to the implementation of FCM? (5) What are the pedagogical research implications of FCM based on previous studies?

## METHODS

This study adopts a systematic literature review to examine articles addressing the application of FCM in EFL/ESL contexts. According to Liberati et al. (2009), Systematic reviews are conducted to provide answers to particular scientific questions on a specific theme by collecting and examining the related empirical studies which are aligned with the criteria of the study. To achieve reliable results and analyses, these types of study explicitly mention the adopted methodology and follow particular scientific values (Higgins & Green, 2008; Liberati et al., 2009).

### Databases

For this study, the most referred databases in the field of social science and educational technology were employed comprising JSTOR, ProQuest, ERIC, and Google Scholar.

This search led to some most preferred instructional technology-related and EFL/ESL teaching journals. The articles were initially collected using specific keywords comprising "flipped classroom", "ESL", "EFL", and "higher education" which revealed various articles with diverse research schemes.

## Inclusion and Exclusion Criteria

These initially retrieved articles were then further selected based on specific criteria to address the quality of this review. For instance, the articles needed to be published in the English language and peer-reviewed. The articles should also be based on empirical studies focusing on EFL/ESL instruction in higher education. To address the publication quality, the included articles will only be collected from SCOPUS-indexed journals. Also, to address the novelty of the study, this review only selected published articles in the last six years (2017-2022).

**Table 1**  
*Inclusion and exclusion criteria*

Criteria	Inclusion	Exclusion
Year of publication	2017 – 2022	Before 2017
Article types	Peer-reviewed	Non-peer reviewed
Types of study	Empirical	Non-empirical
Context of study	EFL/ESL context	Non-EFL/ESL context
Language	English	Non-English
Quality	SCOPUS-indexed	Non-SCOPUS-indexed

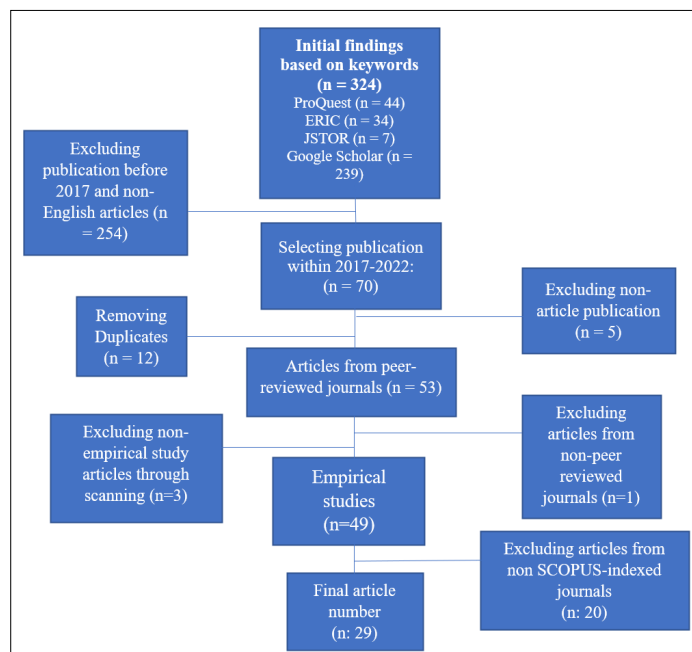
## The article selection process

The articles used in this review were only limited to empirical study articles. A total of 29 empirical study articles that suit the main topic of this review were collected and thoroughly examined. An article published before 2017 (e.g., Şengel, 2016) was also used as a reference to compare the findings and provide a justifiable interpretation of the analysis and pedagogical implication. In addition, there is inclusion (Vuong et al., 2018) from a non-Scopus journal in this review considering the significance of its findings to support the discussion. The following figure presents the summary of the article selection process.

A total of 29 articles were selected based on the inclusion and exclusion criteria. The majority of them were published in educational technology-related journals while some others were collected from education-related journals. The distribution of reviewed articles based on the referred journal is presented in table 2.

**Figure 1**

Overview of the paper selection process



**Table 2**

Distribution of reviewed studies based on journal references

Journal Reference	Number of studies	Study
International Journal of Emerging Technologies in Learning	7	Abdullah et al. (2019A); Aprianto et al. (2020); Li and Qu (2019); Liu and Zhang (2018); Santikarn and Wichadee (2018); Zhang (2019); Abdullah et al. (2021)
Sustainability	1	Li and Li (2022)
Education and Information Technologies	1	Abdullah et al. (2019B)
Computers and Education	1	Bakla (2018)
Journal of Asia TEFL	4	Bonyadi (2018); Teng (2017); Chen and Liu (2019); Yang et al. (2019)
International Review of Research in Open and Distance Learning	1	Cabi (2018)
Computers in Human Behavior	1	Chen Hsieh et al. (2017)
TESOL Quarterly	1	Lee and Wallace (2018)
The EUROCALL Review	1	Leis and Brown (2018)
Educational Technology and Society	2	Lin and Hwang (2018); Lin et al. (2018)
Smart Learning Environments	2	Öztürk and Ünal (2021); Öztürk and Çakıroğlu (2021)
Journal of Computer Assisted Learning	1	Shyr and Chen (2018)
CALL-EJ	1	Vaezi et al. (2019)
Journal of Educational Technology & Society	1	Wu et al. (2017)
Indonesian Journal of Applied Linguistics	1	Zainuddin et al. (2019)
PLoS ONE	1	Zhonggen (2019)
Technology, Knowledge, and Learning	1	Akayoğlu (2021)
Sage Open	1	Yu and Gao (2022)

## RESULTS

The following section presents the analysis of articles to provide answers to the proposed research questions. The analysis revealed the matrix of the latest FCM studies, practical instructional benefits, barriers to implementation, and pedagogical implications of the approach.

**Table 3**

*Matrix of the previous studies*

## Matrix of the Current Study

Using a holistic approach, the matrix of the previous studies presents the overview of previous studies for FCM application in the following table.

Study	Topic	Theoretical/ pedagogical Framework	Participants	Designs, instruments	Instructional tools
Chen Hsieh et al. (2017)	EFL students' technological acceptance	The Technology Acceptance Model (TAM)	42 sophomores in central Taiwan whose ages ranged from 20 to 21 years old	Action research coupled with a mixed-method approach using tests of oral proficiency, questionnaires, interviews	LINE
Zhonggen (2019)	Video lecturing's effects on student satisfaction and English proficiency	Constructivism	87 Chinese university students, upper intermediate level (Male n = 43, Female n = 44) They ranged from 19 to 22 in age (M = 20.33, SD = 1.02).	Experimental study coupled with a mixed-method approach using Four scales, including a CET 4 to determine English proficiency and three scales to identify interaction feasibility, self-efficacy, and self-regulation levels	Clicker
Cabi (2018)	The effects of FCM on students' academic achievement	Constructivism	59 pre-service teachers studying English Language Teaching and 59 students in Turkish Language Teaching Programs	Experimental study coupled with a mixed-method approach employing achievement tests and focus group interview	Video, Kahoot
Bonyadi (2018)	The impacts of the flipped instruction on students' oral interpretation performance	Discovery learning, socio constructivism	39 Iranian EFL students at the advanced level majoring in English Translation Studies at Islamic Azad University, Urmia branch.	Quasi-experimental design using tests of students' oral interpretation performance	Learning content from various websites
Yang et al. (2019)	Comparing high- and low-achievers English vocabulary learning in a flipped classroom setting	Constructivism, F-L-I-P™ principle	87 second-year students from a university in Northern Taiwan	Experimental design using An English vocabulary assessment, and a questionnaire	Video, Facebook, Kahoot
Leis and Brown (2018)	The effects of instructors' experience in the flipped classroom model	N/A	38 second-year students of a university in Japan	Quasi-experimental design employing a writing test	Videos

Study	Topic	Theoretical/ pedagogical Framework	Participants	Designs, instruments	Instructional tools
Bakla (2018)	Examining student-generated materials in a flipped pronunciation class	Inquiry-based learning	40 intermediate Turkish students of English major students (35 females and 5 males. 34 of the participants (85%) were aged between 18 and 20.	Case study combined with sequential explanatory mixed-methods approach using  a post-instruction survey and follow-up interviews	Videos, Moodle, online text-to-speech software, HotPotatoes (Half-baked Software, n.d.) and Softchalk (Softchalk LLC., 2015), online flashcard programs
Vaezi et al. (2019)	Teaching listening comprehension using FCM	Constructivism	119  advanced level students majoring in English translation, literature, and English teaching at two branches of Islamic Azad University	Quasi-Experimental design with a quantitative approach employing  a pretest, a posttest, and a delayed posttest	Audio materials,  Video and audio resources from TED (www.ted.com), YouTube, and National Public Radio (www.npr.org).
Abdullah et al. (2019A)	The effectiveness of FCM on English speaking performance	Socio-constructivism	27 undergraduate students at intermediate to upper-intermediate level majoring in English at Buraimi University College (BUC), Oman	Quasi-experimental design coupled with  A mixed-method employing approach oral proficiency tests, observation notes, focus group interview	Google Classroom
Zainuddin et al. (2019)	Self-directed learning in the EFL flipped-class pedagogy	Constructivism	10 undergraduate students at the intermediate level of a university in Indonesia	Case study adopting a qualitative approach employing  online observations and semi-structured interview	TES BlendSpace
Shyr and Chen (2018)	Students' self-directed learning and language performance	Socio-constructivism	81 sophomores of non-English majors  at a public university in central Taiwan. Their ages ranged from 19 to 23.	Quasi-experimental study (quantitative) employing a learning performance test, weekly quizzes, a flipped classroom readiness survey, and a self-regulated survey	A technology-enhanced flipped language learning system (Flip2Learn)
Lin and Hwang (2018)	Influencing factors of EFL students' oral performance	Online community-based flipped learning approach	49 EFL freshmen  in a Taiwanese university who had the same level of English proficiency and whose age mean was 18	Quasi-experimental design (quantitative) using oral performance video clips, students' participation, students' interactive behavior, and a survey questionnaire	Facebook
Lee and Wallace (2018)	Students' learning outcomes and perceptions	N/A	79 EFL students at intermediate-level in a college English class at a South Korean university.  (61 males and 18 females)	Action research design coupled with a mixed-method approach using  students' achievements in three major tasks, three surveys, and observation notes	Video lectures

Study	Topic	Theoretical/ pedagogical Framework	Participants	Designs, instruments	Instructional tools
Lin et al. (2018)	A flipped contextual game-based learning approach to improve writing skills	A flipped contextual game-based learning approach, constructivism	68 Taiwanese undergraduates who had a similar level of English proficiency; The students' ages ranged from 18 to 22	Quasi-experimental study coupled with a mixed-method approach, design collecting students' essays, participation, reflections, and online learning behavior as instruments of the study	A contextual educational game
Liu and Zhang (2018)	Computer-Distance Education (CDE) to teach English writing	Constructivism and humanistic learning theories	400 college students among four universities with the course of practical English writing in China	Case study using questionnaires followed by a quasi-experimental study using tests	Jukuu (web-based teaching platform)
Li and Qu (2019)	Developing a platform for teaching English at the college level	Humanistic learning theory, Constructivist theory, Autonomic, and cooperative learning theories	45 students in the non-English majors at the sophomore level in a university in Hunan Province, China	Quasi-Experimental design coupled with a mixed-method approach employing an interview, a questionnaire survey, and TOEIC	The flipped classroom-based B/S teaching platform
Zhang (2019)	Developing an FC-based education system for teaching English at the college level	N/A	152 sophomore students from non-English majors in a university in Zhejiang, China	Case study coupled with a quantitative approach employing questionnaires	A college English education system developed using SQL server and FC.
Santikarn and Wichadee (2018)	FCM to teach EFL at the college level	N/A	40 students enrolled in an advanced English course in a private university in Thailand	Case study coupled with a quantitative approach using five assignments and two sets of questionnaires	Edmodo
Aprianto et al. (2020)	Investigating the effects of multimedia-assisted FCM on students' self-directed learning	N/A	15 undergraduate students of the English education department in an Indonesian University	Case study coupled with a qualitative approach employing observation, questionnaires, and interviews	Various online reading materials and videos learning management systems (LMS)
Abdullah et al. (2019B)	The effects of FCM on students' motivation level in English speaking performance	Constructivism	27 students majoring in English at Buraimi University College (BUC), Oman	Quasi-experimental study coupled with a mixed-method approach employing a Motivation in English Speaking Performance Questionnaire (MESPPQ) and reflective journal forms	Instructional videos
Chen and Liu (2019)	Examining high and low achievers' preferences of workload, work type, and perceived usefulness in FCM	Constructivism	39 university foreign language (FL) learners with diverse achievement profiles from south Taiwan, including eight males and 31 females (mean age: 21.5 years)	Case study coupled with a mixed-method approach using questionnaire survey and oral interview	An interactive class platform, Zuvio that includes recorded video lectures
Wu et al. (2017)	Creating an online learning community in a flipped classroom to enhance EFL learners' oral proficiency.	The Community of Inquiry (CoI) framework	50 English-majored sophomores enrolled in two oral training classes at a four-year comprehensive university in central Taiwan	Case study coupled with a mixed-method approach employing oral reading and comprehension tests, a CoI questionnaire, and semi-structured focus-group interviews	Mobile application LINE

Study	Topic	Theoretical/pedagogical Framework	Participants	Designs, instruments	Instructional tools
Öztürk and Ünal (2021)	FCM as a self-regulated learning strategy to develop language skills	N/A	49 students (18–20 years old) enrolled in an EFL course at a state university accounting department in Türkiye	Quasi-experimental pre-test-posttest control group design (quantitative) using English proficiency tests	FCM_WEB platform to access instructional videos, reading notes, and online test
Teng (2017)	The effects of FCM on the improvement of students' academic performance and learning satisfaction	Constructivism, Problem-based theories, and Self-determination theory	90 students learning English as a foreign language (EFL) 50 females and 40 males—aged 18-20 years old at a university in China	Experimental design coupled with a mixed-method approach using academic performance tests, questionnaires, and semi-structured interviews	Instructional online videos. (WebQuests plus online videos)
Öztürk and Çakıroğlu (2021)	Employing self-regulated learning strategies within a scheme of FCM to improve students' language performance	Self-regulated learning	49 EFL undergraduates at a state university in Türkiye. The students' ages ranged from 18 to 20 years old.	A quasi-experimental pre-test-posttest control group design employing an English proficiency test and an achievement test	FCM_SRL system presenting videos, online tests, online discussion, and diary module
Abdullah et al. (2021)	Examining students' anxiety in the production of oral language under a scheme of FCM	Collaborative and active learning approaches	27 undergraduates majoring in English as a foreign language at Buraimi University College (BUC), Oman.	Case study, a mixed-method approach employing the Anxiety in English Speaking Performance Questionnaire (AESPQ), the focus group interviews, and students' reflective journals	Video lectures
Akayoğlu (2021)	The perceptions of EFL pre-service teachers on FCM	Self-determination theory	58 pre-service teachers of English in Türkiye consisting of 43 females and 15 males. The ages range from 21 to 24 years old	Case study and a mixed-method approach using the questionnaires and interviews	Google Classroom
Yu and Gao (2022)	The effects of video length on English proficiency, student engagement, and satisfaction in a flipped English classroom	Constructivism	97 Chinese university students (Female n = 75; Male n = 22) The ages range from 16 to 19 years old (M = 17.49; SD = .98).	Experimental design coupled with a quantitative approach using The TOEFL test and questionnaires	Instructional videos
Li and Li (2022)	The effects of the flipped of FCM on four aspects of learner engagement in teaching listening and speaking	Collaborative learning	69 university students in mainland China	Experimental design coupled with a mixed-method approach using tests and semi-structured interviews	The Cloud Classroom, Instructional videos

Table 3 above presents a brief description of the studies comprising the topic, the conceptual/theoretical frameworks, participants, research design and instruments, and the instructional tools. In the following section, the results

and discussions of different components of studies are presented exposing the pedagogical benefits, practical challenges, and the formulated pedagogical and research implication.

## Theoretical Frameworks in the Previous Studies

The majority of the studies ( $n = 12$ ) were grounded on the scheme of constructivism (Yu & Gao, 2022; Zhonggen, 2019; Cabi, 2018; Bonyadi, 2018; Yang et al., 2019; Vaezi et al. 2019; Zainuddin et al., 2019; Abdullah et al., 2019B, Chen & Liu, 2019; Lin et al., 2018; Liu & Zhang, 2018; Li & Qu, 2019). Constructivists believe that learners build their own knowledge by integrating new information with their pre-existing knowledge instead of obtaining information passively. Three other studies by Abdullah et al. (2019A), Bonyadi (2018), and Shyr and Chen (2018) indicated the application of Socio constructivism. This theory postulates the essence of interaction as a pivotal element of students' learning. Based on this theory, learning occurs as ideas are exchanged and constructed via interaction between the instructor and students or among students (Powell & Kalina, 2009). Bonyadi (2018) also included discovery learning which was introduced by Jerome Bruner (1961). This popular theory highlights the idea that learners should be directed to acquire new information and truths by building on past experiences, pre-existing notions, imagination, and creativity.

Other studies were based on various schemes of theories. For instance, a study by Yang et al. (2019) was conducted based on the F-L-I-P™ principle. This principle emphasizes the need for flexibility in the learning environment, self-directedness in learning, qualified learning materials, and the professionalism of the educators. Aside from constructivism, Both Li and Qu (2019) and also Liu and Zhang (2018) grounded their study on humanistic learning theory. This theory postulates that the learning process occurs as feeling intervenes with knowledge acquisition. It emphasizes the essence of both cognitive and affective learning as the determinants of the success of learning (Chen et al., 2017). Wu et al. (2017) implemented The Community of Inquiry (CoI) framework which serves as a model to examine and evaluate a learning community (Garrison et al., 2001; Garrison et al., 2010). CoI incorporates three interdependent components to manifest effective online learning: teaching presence, social presence, and cognitive presence.

Furthermore, Li and Qu (2019) developed their study based on the autonomic theory and the cooperative learning theory. The autonomic learning theory explains the importance of the learners' subjective initiative to internally shape learning behavior. The cooperative learning theory focuses on the use of students' grouping to complete classroom assignments or discuss particular issues presented in class. Inquiry-based learning was adopted in Bakla (2018). It refers to a learning model in which students generate questions, formulate answers to respond to posed questions, communicate the answers and new information with their peers, and do a reflection on the learning process. Teng (2017) and Akayoğlu (2021) grounded on self-deter-

mination theory to examine the effects of FCM on the improvement of students' linguistic performance and learning satisfaction. This theory postulates the division of students' learning motivation into two categories: intrinsic and extrinsic motivation (Deci & Ryan, 2002). Intrinsic motivation is related to the emotional state as a result of students' engagement in particular activities. Extrinsic motivation is related to the external factors which empower students for their involvement in particular activities.

Öztürk and Çakıroğlu (2021) adopted Self-Regulated Learning (SRL) which is based on the work of Zimmerman (1990). This framework emphasizes the significance of the students' metacognition, motivation, and behavior as supporting elements for successful learning. Students have the authority to manage their own learning through a cyclical process of SRL comprising three phases of learning; forethought phase, performance phase, and self-reflection phase (Öztürk & Çakıroğlu, 2021; Artino & Stephens, 2009; Zimmerman, 1998).

Lastly, Li and Li (2022) adopted a collaborative learning model. This model emphasizes the essence of students' collaboration through learning groups. Each group member is expected to contribute to the group discussion by sharing knowledge and experience and encouraging other group members to achieve the goals of learning (Johnson & Johnson, 1986).

## Participants of the Study

All studies in this review involved EFL/ESL students of higher education from different parts of Asia nations. For instance, a total of 16 studies were conducted in East Asia such as China (Yu & Gao, 2022; Li & Li, 2022; Zhonggen, 2019; Zhang, 2019; Teng, 2017; Liu & Zhang, 2018; Li and Qu, 2019), Japan (Leis & Brown, 2018), Taiwan (Yang et al., 2019; Shyr & Chen, 2018; Chen & Liu, 2019, Lin & Hwang, 2018; Lin et al., 2018; Wu et al., 2017; Chen Hsieh et al., 2017) and South Korea (Lee & Wallace, 2018). In Southeast Asia, two studies were reported from Indonesia (Zainuddin et al., 2019; Aprianto et al., 2020) and one study was conducted in Thailand (Santikarn & Wichadee, 2018). In Western Asia, two studies were conducted in Iran (Vaezi et al., 2019; Bonyadi, 2018) and the other three studies were from Oman (Abdullah et al., 2019A; Abdullah et al., 2019B; Abdullah et al., 2021). This study also included five studies from Türkiye (Cabi, 2018; Bakla, 2018; Öztürk & Ünal, 2021; Öztürk & Çakıroğlu, 2021; Akayoğlu, 2021). Overall, a total of 2032 participants ranging from 18 to 23 years old were recruited in 29 studies.

## Methods and Instruments

The majority of the studies ( $n = 12$ ) in this review adopted the quasi-experimental design coupled with either a quantitative approach ( $n = 8$ ) or a mixed-method approach ( $n = 4$ ). For example, Bonyadi (2018) employed a quasi-exper-



imental design that was quantitatively structured through students' oral interpretation performance tests as data collection. Similarly, Leis and Brown (2018) employed this design to examine the effects of instructors' experience in the flipped classroom model and collected the data through writing tests. A combination of a quasi-experimental design and mixed-method approach can be found in the study by Abdullah et al. (2019A) which employed oral proficiency tests, observation notes, and focus group interviews as the instruments of data collection.

Aside from quasi-experimental design, six studies included randomization in subject selection to incorporate an experimental design (Li & Li, 2022; Yu & Gao, 2022; Zhonggen, 2019; Cabi, 2018; Yang et al., 2019; Teng, 2017). Zhonggen (2019) adopted an experimental design combined with a mixed-method approach using four scales, including a CET 4 to determine English proficiency and three scales to identify interaction feasibility, self-efficacy, and self-regulation levels. Also, Cabi (2018) combined an experimental design and a mixed-method approach to gather data through achievement tests and focus group interviews.

A total of 10 studies were identified using a case study which was coupled with either a qualitative (Zainuddin, Habiburrahim, Muluk, & Keumala, 2019; Aprianto, Purwati, & Anam, 2020), a quantitative (Zhang, 2019; Santikarn & Wichadee, 2018), or a mixed-method approach (Bakla, 2018; Chen & Liu, 2019; Wu et al., 2017; Abdullah et al., 2021; Akayoğlu, 2021). Zainuddin et al. (2019) employed a case study design and qualitatively collected data through approach online observations and semi-structured interviews. Meanwhile, Aprianto et al. (2020) combined a case study design and a mixed-method approach by employing observation, questionnaires, and interviews. Both Zhang (2019) and Santikarn and Wichadee (2018) adopted a case study and collected data through questionnaire surveys with additional instruments of five assignments for Zhang (2019). Additionally, a study by Liu and Zhang (2018) combined a case study design using questionnaires and a quasi-experimental design using tests.

Lastly, two studies adopted an action research design coupled with a mixed-method approach. Lee and Wallace (2018) adopted this combination and harnessed three types of instruments comprising students' achievements in three major tasks, three surveys, and observation notes. Meanwhile, Chen Hsieh et al. (2017) also used three instruments including tests of oral proficiency, questionnaires, and interviews.

## Instructional Tools

Several different tools were employed in the reviewed studies. They include social media, instructional platforms, multimedia content, and other software/tools.

## Social Media

Facebook has been a popular social media to support and promote student self-learning. In this review, two studies adopted this social media as a tool to bridge interaction among students and between the instructor and students. Yang et al. (2019) used Facebook as one of the tools in their study that compared high- and low-competent students regarding their skills in English vocabulary. Meanwhile, Lin and Hwang (2018) utilized this media as a primary tool to examine the influencing factors of EFL students' oral performance. On the Facebook wall, the instructor provided several instructional video links retrieved from TED, Voice Tube, and YouTube. Mobile application LINE which expands its function from a mobile messaging application to a mobile social media application was used in both Chen Hsieh et al. (2017) and Wu et al. (2017).

## Instructional Platforms

Several studies mentioned the use of instructional platforms for the application of FCM. This review noted various platforms used in different schemes of studies that are available in the market comprising google classroom (Abdullah et al., 2019A; Akayoğlu, 2021), Web-based teaching platform Jukuu (Liu & Zhang, 2018), Moodle (Bakla, 2018), Edmodo (Santikarn & Wichadee, 2018) and an interactive class platform, Zuvio (Chen & Liu, 2019). In a study, Zainuddin et al. (2019) utilized TES BlendSpace to develop the lesson by posting instructional video lessons retrieved from YouTube and arranging class assignments.

Additionally, several studies claimed to have developed their instructional platform which is specifically tested for the study. For instance, Li and Qu (2019) developed the flipped classroom-based B/S teaching system to present students with pre-class learning content. This system enables students to access various online resources including NetEase Open Class, U.S National English Corpus, China National Knowledge Network, and other learning content designated for students at the higher education level. Similarly, Zhang (2019) also harnessed a college English education system that was constructed based on SQL server and FC. Both Aprianto et al. (2020) and Li and Li (2022) used a particular learning management system (LMS) to share learning content and enable learning collaborations among students and between the instructor and students. In another study, Shyr & Chen (2018) employed A technology-enhanced flipped language learning system (Flip2Learn) which was constructed and developed using Microsoft SQL Server 2005 (the database structure of Flip2Learn). This system collected data about their learning preferences and perspectives as students initially accessed it. Additionally, both Öztürk and Ünal (2021) and Öztürk and Çakıroğlu (2021) developed an FCM\_WEB platform to access instructional videos, reading notes, and online tests.

### **Multimedia Content**

To support student self-learning, the instructors used multimedia formats of learning content. It was found that the majority of the studies used videos that were linked to the learning management system. For instance, Vaezi et al. (2019) presented videos and audio content that were linked to TED, YouTube, and National Public Radio. Aprianto et al. (2020) provided the links to online reading references and videos from Youtube on the developed learning management system. Similarly, in Bonyadi (2018), learning content from various websites was made available for students to access during their self-study.

Other videos were specifically created by recording the lectures within a specific time duration. This type of media was found in eight studies (Abdullah et al., 2019B; Cabi, 2018; Yang et al., 2019, Leis & Brown, 2018; Lee & Wallace, 2018; Teng 2017; Abdullah et al., 2021; Bakla, 2018).

### **Other Software / Tools**

Aside from social media, instructional platforms, and multimedia content, several studies included other software or tools to support the FCM application. Cabi (2018) and Yang et al. (2019) used Kahoot! which is a learning platform that is specifically designed for generating, sharing, and playing learning games or short quizzes. Bakla (2018) utilized various software such as online text-to-speech software, HotPotatoes (Half-baked Software, n.d.), Softchalk (Softchalk LLC., 2015), and online flashcard programs.

Incorporating the online gaming elements, Lin et al. (2018) utilized RPG Maker VX from Enterbrain Incorporated to develop a contextual educational game. This game embedded a story-based learning module along with a game rules module to appropriately follow business trade cycles or public regulations. From this game, students can gain a good comprehension of business trade and improve their writing skills in the field of business writing. Additionally, Zhonggen (2019) used a Clicker which refers to a hand-held device to remotely control projected visual output from computers. This device allows students to get engaged in classroom discussion with a better learning efficiency.

### **Practical Instructional Benefits of the Flipped Classroom Model**

The studies of FCM have provided evidence of instructional benefits that positively affect students' competence in EFL instruction. Based on the analysis of the studies, this study reported that FCM contributes to students' learning progress by supporting linguistic skills development, improving learning motivation, encouraging self-directed learning, promoting self-efficacy, and facilitating self-directed learning.

### **Language Skills Development**

FCM is deemed as an innovative approach to teach a target language by incorporating various instructional technology. Various studies have reported the affordances of this approach to develop students' language skills. This review identified four studies (Abdullah et al., 2019; Bonyadi, 2018; Wu et al., 2017; Lin & Hwang, 2018) that demonstrate the positive effects of FCM on students' oral performance. Three studies (Abdullah et al., 2019; Bonyadi, 2018; Lin & Hwang, 2018) employed a quasi-experimental design and shared similar findings despite a difference in the technological tools for the experiment. Based on the findings, all these three studies concluded that the experiment managed to enhance students' oral performance as indicated by the statistical analysis. An interesting finding is found in Lin and Hwang (2018) stating that students with high achievement exhibited higher involvement during the online meeting in comparison with students with low achievement. Meanwhile, Wu et al. (2017), as well as Li and Li (2022), revealed the significance of the online learning community to accommodate engaging and active learning collaboration which subsequently led to the development of students' oral language performance. Information about the potential of FCM to improve students' writing skills was extracted from Lin et al. (2018) and Liu and Zhang (2018). Despite the use of different instructional tools in their FCM applications, both studies implied that FCM was effective to improve the students' English writing skills. The studies indicated a lower quantity of writing errors due to the effect of FCM.

This review included a study emphasizing the effects of FCM on the improvement of reading skills by Lee and Wallace (2018). This study compared a Communicative Language Teaching (CLT) approach with FCM. Both approaches managed to improve students' reading performance. However, the majority of students in FCM group positively perceived the model and exhibited more active participation during the classroom discussion in comparison to the CLT group.

Focusing on listening skills, Vaezi et al. (2019) investigated the effects of FCM on 119 English language learners at the advanced level. This experimental study compared two experimental groups; Authentic Audio Material Group (AAMG), Pedagogical Audio Material Group (PAMG), and one Control Group (CG). The results revealed that the treatment through FCM for Authentic Audio Material Group (AAMG) and Pedagogical Audio Material Group (PAMG) managed to effectively improve students' listening comprehension in both the short and long term. Both of these groups managed to outperform the control group. However, the authors indicated more positive effects of authentic audio content compared to pedagogical audio content.

Other studies indicated that the FCM application affects students' academic progress as seen in their classroom performance. Li and Qu (2019) compared the experiment group

receiving FCM treatment that adopted B/S architecture platform with the control group that was taught using the conventional model. The study implied the effectiveness of FCM to improve students' reading and listening skills as indicated in the comparison of English test scores between both groups. Substantially, the increase in the English scores for the experimental group was higher than that of the control group. In another study, Yang et al. (2019) argued that this instructional approach managed to develop vocabulary mastery with an indication that low achievers gained more benefits from this approach compared to high achievers.

### ***Learning Motivation***

Improving students' learning motivation serves as an appeal of FCM to many teaching practitioners in the current years. The English proficiency of college students is primarily reliant on the level of their learning motivation. This review identified five studies that explain the impact of FCM on students' learning motivation. Teng (2017) demonstrated how FCM improves students' positive perceptions of learning during their involvement in a cross-cultural communication course in an experimental study. Another experimental study by Cabi (2018) compared flipped-based blended learning and conventional blended learning. Both treatments did not show any significant difference, but students were more motivated to learn in flipped-based blended learning due to the absence of homework. Meanwhile, Zhang (2019) developed a particular system of FCM based on SQL Server with the browser/server (B/S) structure. The system managed to encourage students to learn the content independently which subsequently increase their time for self-study. Students were more motivated to participate during class discussions and thus developed their skills and knowledge in learning EFL. Two other studies by Abdullah et al. (2019B) and Abdullah et al. (2021) revealed that students became more productive in language production and less reluctant to express their ideas during classroom discussions. Also, FCM allows them to use their own preferred learning strategies to complete their class assignments.

Students' motivation during FCM is affected by several factors. A study by Li and Li (2022) addressed this issue and found that the learning environment, instructor presence, learning content, and learner presence contributed to the improvement of students' motivation to actively participate in class discussions. More specifically, Yu and Gao (2022) argued that FCM could elevate students' motivation by considering particular elements including the length of learning videos and the flexibility of the communication styles between students and the instructor.

### ***Self-directed Learning***

FCM is reported to accommodate self-directed learning among EFL/ESL students. This review found nine studies explaining the strengths of FCM to accommodate self-directed

learning. For example, Santikarn and Wichadee (2018) and Aprianto et al. (2020) claimed that the application of FCM allowed students to be more independent in their language learning. FCM could assist students in independently managing their learning and become more creative to gain comprehension of the learning content during the learning process while lowering the learning tension. This claim is supported by Zhonggen (2019) and Bonyadi (2018) who reported that FCM can be a suitable approach for students who prefer to be more independent in learning and not reliant on their instructors' guidance to study the learning content and solve learning issues. Students can make the most of their learning by harnessing their respective learning styles (Leis & Brown, 2018; Shyr & Chen, 2018; Lin & Hwang, 2018). In more recent studies, Öztürk and Ünal (2021) and Öztürk and Çakiroğlu (2021) provided evidence that both FCM and self-directed learning strategies could be an effective combination to improve students' language skills.

### ***Self-Efficacy***

Several studies provided evidence of the positive impacts of FCM in developing students' self-efficacy in English language learning. For instance, Liu (2019) asserted that this model brings refreshment to the conventional instruction of EFL. Through this model, students were positively triggered to actively engage in the learning interaction and could easily adapt to the transition from conventional face-to-face instruction to FCM (Aprianto et al., 2020; Li & Qu, 2019; Zhonggen, 2019). Students were also more confident with their language performance during the learning process (Abdullah et al., 2019A; Chen-Hsieh et al., 2017). FCM also provides more engaging and attractive learning activities which subsequently led to students' learning satisfaction and self-confidence in using technologies (Lee & Wallace, 2018; Lin & Hwang, 2018; Santikarn & Wichadee, 2018; Akayoğlu, 2021). Furthermore, Abdullah et al. (2019B) further indicated the development of positive attitudes toward FCM among students. It was reported that students were satisfied with the class due to increased opportunities for them to practice their verbal communication skills.

### ***Collaborative Learning***

FCM is incorporated to meet the needs of EFL students to adapt to technological development and prepare themselves for engaging and collaborative instructional methods (Dorman, 2016). This approach facilitates a learning setting in which students can collaboratively work to solve emerging issues or gain the required notion (Bonyadi, 2018; Zhonggen, 2019). Aprianto et al. (2020) and Zainuddin et al. (2019) stated that FCM promoted better learning involvement, interaction, and collaboration among the students. Students could help other students to check their peers' errors of language production while, at the same time, becoming more aware of their abilities and mistakes during online peer assessment. Moreover, Chen and Liu (2019) explained

the different preferences of learning settings as highly competent students like to work individually while low competent students like to work collaboratively in the FCM setting.

## Barriers to the Implementation

Aside from the aforementioned pedagogical benefits of the FCM as an effort to develop students' EFL language performance and provide an engaging learning experience, there are some indications of the barriers to the effective implementation of this approach. These barriers include the problems of self-directed learning, technical issues, and increased workload.

### *Problems of Self-directed Learning*

One strong point of FCM is that this model allows students to be independent to manage their own learning. However, students might find it difficult to concentrate during the learning process due to the distraction of their surroundings (Vuong et al., 2018). Cabi (2018) further asserted that some students still find it difficult to manage their time for studying.

### *Technical Issues*

To effectively utilize FCM, both students and instructors need to have proper access to the required technology. Vuong et al. (2018) indicated students' frustration as a result of a slow internet connection indicating the need for qualified internet-connected devices and a good internet connection. A similar issue was found in Li and Li (2022) which also addressed the negative impacts of using long videos to present the learning content. In another study, Zhonggen (2019) reported that video lecturing impeded students' reading comprehension as this medium often contains some distracting noise while being played. Eye fatigue also became a reason why students preferred to read learning content from hard-copy files instead of mobile content. Additionally, videos or PowerPoint slides might restrict the instructor's opportunities to immediately clarify the unclear content (Zhonggen, 2019). The quality of tools used in a flipped classroom was also a concern in a study by Teng (2017) and Cabi (2018). The use of low-quality videos to substitute class lectures posed learning difficulties for students to comprehend the learning content.

### *Increased Workload*

FCM allows an extensive classroom discussion that requires instructors to present learning contents in various format and suitable teaching strategies. It can be a challenging task for instructors as they need to allocate their time to create the materials or collect them from third parties that are suitable for students' needs (Zhonggen, 2019). Suranakkharin (2017) further suggested that instructors need to train themselves to be proficient in organizing classroom activi-

ties as well as harnessing online learning facilities. It is not an easy task, especially for those who are not accustomed to online technology. Students, on the other hand, made extra efforts in the flipped classroom. Bakla (2018) mentioned the need for various digital literacies which often require certain preparation to implement the model. Furthermore, FCM poses students with additional workloads that might be unappealing and even stressful (Vuong et al., 2018; Li & Li, 2022). Allocating additional time to work for their course after school hours is unavoidable making this class more demanding than the traditional one.

### *The Unavailability of Immediate Guidance*

As students work independently anywhere outside the classroom, the instructor encourages students to independently learn the content and complete the assigned exercises. Students need to work to comprehend the content by watching the provided videos, reading the slides, or web pages which is necessary to prepare them to get engaged in the upcoming classroom discussion. For this type of FCM, Cabi (2018) reported issues regarding the absence of immediate guidance. The author argued that the absence of direct support during students' self-learning made students feel frustrated when they encountered issues dealing with the content or technical matters.

## DISCUSSION

This systematic review aimed to answer five research questions regarding the implementation of FCM. The first research question concerns the theoretical framework used to design FCM. The findings managed to identify several frameworks in the study such as constructivism which was explicitly integrated into the majority of experimental studies (e.g. Yu & Gao, 2022; Zhonggen, 2019; Cabi, 2018; Bonyadi, 2018; Yang et al., 2019; Vaezi et al). As for other studies adopting a case study design, various theories were applied to collect the data including inquiry-based learning in Bakla (2018) and the humanistic learning theory in Liu and Zhang (2018). One interesting point from the finding is that the application of FCM emphasized the types of technology used during the process and yet the strategies to optimize the classroom discussion lack attention in several studies. Thus, future research can address this issue and provide more comprehensive findings which covers both online and offline learning activities.

The second question concerns the research methodologies and technological tools used to conduct studies of FCM. With an emphasis on empirical studies, this review found that a quasi-experimental design was employed in the majority of the study followed by the an experimental design, a case study, and classroom action research. No study adopted a phenomenological approach that might present valuable and in-depth insights regarding the application of FCM from

the perspectives of either instructors or students. The population was also dominated by undergraduate students with various majors from universities in Asia. It implies that there is still room for investigation regarding the level of students for research participants by recruiting master's students. Moreover, FCM utilized various tools such as online instructional videos, social media, mobile applications, and other instructional tools. However, studies with new technology such as augmented reality and artificial intelligence under the scheme of FCM might reveal interesting findings.

The third question attempted to describe the practical instructional benefits of FCM. The majority of the studies reported the effectiveness of the model in developing students' language skills (e.g. Abdullah et al., 2019; Bonyadi, 2018; Wu et al., 2017; Lin & Hwang, 2018) as well as their academic progress (e.g. Yang et al., 2019). They also indicated the adoption of this model on the improvement of students' motivation and learning efficacy by incorporating collaborative and self-directed learning. These benefits indicated that FCM emphasized the importance of students' independence to manage their own learning and their initiative to get actively engaged in learning discussion. As a consequence, teachers need to harness suitable strategies and approaches to provide necessary guidance and solution to any emerging issues.

The fourth question deals with the barriers to the implementation of FCM. Several studies reported the emerging instructional barriers that impeded the effective application of the model. For example, students encountered issues in managing their own learning activities prior to the class due to distractions from their surroundings and time management (Vuong et al., 2018; Cabi, 2018). It is made even more problematic with the unavailability of immediate guidance from instructors (Cabi, 2018). In terms of technical issues, the quality of videos or the internet connections proves to be significant barriers for students to comprehend the learning content (Vuong et al., 2018; Zhonggen, 2019; Teng, 2017; Cabi, 2018; Li & Li, 2022). Additionally, in some cases, both students and instructors were burdened with the additional workload resulting from the FCM application (Zhonggen, 2019; Suranakkharin, 2017; Bakla, 2018; Vuong et al., 2018; Li & Li, 2022). For teachers planning to adopt FCM, the ability to identify issues in the early stage of the application of this model is deemed necessary. Their efforts to identify and alleviate issues as early as possible will determine the success of this model to improve the quality of instruction.

## Pedagogical Implications

It is reported in previous studies that implementing FCM can pose both instructors and students with various instructional challenges. For instance, the expected face-to-face discussion as the extension of the class might not run as expected because students do not comprehend the provided content and feel reluctant to consult their difficulties during the pre-

class sessions (Cabi, 2018). Additionally, students might find it hard to manage their learning due to the absence of direct supervision from the instructor. For the instructor, managing students outside the classroom prove to be a difficult task as students have their respective personal matters. To gain success in this model, both instructors and students need to make a clear commitment to actively contribute to the actual instructional practices underlying this model. Instructors should also consider allowing students to interact with them outside the class in either personalized or collaborative interaction (Butt, 2014; Milman, 2012).

The instructors hold an essential role as learning facilitators who provide necessary feedback for learning and build students' positive perceptions of the learning process aside from preparing learning content. They should also guide students during their offline and online learning activities by helping them to construct a certain level of content comprehension during the process (Bonyadi, 2018). Akayoğlu (2021) highlighted the instructors' attitudes on the online platform which affect the overall application of FCM. Thus, they need to pay attention to students' characters to diminish feelings of anxiety or embarrassment among students in organizing the class activities. It is also necessary for them to formulate short assignments that include new information from students' learning content to guide them during their self-directed learning (Aprianto et al., 2020). Furthermore, Li and Li (2022) claimed that support from instructors and any involved parties in the education field is necessary to build students' positive attitudes toward FCM and thus help students to alleviate emerging issues during the application of this model.

The preparation stage of FCM is essential to get students accustomed to this approach. Suranakkharin (2017) and Liu and Zhang (2018) highlighted the need for the instructor to prepare students for the transition of instructional mode from conventional to FCM. They agreed that proper time allocation for the preparation stage is necessary for the transition. For this reason, a computer lab can be used to provide a tutorial for students to practice the accessibility of the applications or platforms used for the models (Lee & Wallace, 2018). Thus, instructors can create PowerPoint presentations or even distribute a hard copy of the materials for students to prevent possible technical issues dealing with the internet connection or the software. The online platform should be selected and utilized by considering the ease of access for various types of computing devices. Also, students should be directed to use the facility in the university library or public places that allow them to access their online content or class. Furthermore, special attention is deemed necessary for passive-type students to encourage them to participate in class discussions to obtain the instructional goals of FCM. In a similar vein, Aprianto et al. (2020) emphasized the need for instructors to allocate their time for students to consult their problems and obtain instant solutions that will decrease the risk of losing learning

interest during the class periods or outside the classes. Also, Liu and Zhang (2018) pointed out the importance of preparing students' mindsets for independent learning before proceeding to the application of this model. The model might be rendered ineffective due to wrong mindsets and the lack of preparation for the transition of pace. This claim is supported by Vaezi et al. (2019) who asserted that the success of FCM can be attributed to the fact that the time of learning has been extended by adding extra learning activities before the class to better prepare students with the instructional materials.

E-learning content needs to be carefully designed and developed to provide necessary information prior to the class meeting. As students need to work by themselves, the content should be organized in an attractive, clear, and brief fashion so students get attracted to watch and read the content. Instructors might need to creatively make a self-video recording or harness the available third-party videos from YouTube or other web pages that provide an explanation about the lesson and serve as a reference for the upcoming classroom discussion (Şengel, 2016). The videos containing the required information for flipped learning should be created as concisely as possible and preferably contain some engaging elements such as quizzes and games to attract students' attention without omitting its focus on content comprehension (Leis & Brown, 2018; Ekmekci, 2017). Moreover, it is necessary to consider the uploaded data sizes to ease the process of downloading or buffering. Alternatively, the instructors can store the file in a portable data storage (flash disk) and assign the class representative to handle the distribution of the file (Ekmekci, 2017). Considering the diversity of students' competence, Chen and Liu (2019) suggested that instructors consider designing an assignment that could be completed within one hour during the pre-class step. Both Li and Li (2022) and Yu and Gao (2022) pointed out the length of videos for learning content. More specifically, Yu and Gao (2022) agreed that the short videos (5 minutes or less) worked more effectively to improve students' learning outcomes, learning motivation, and participation in learning than longer videos. The lesson plan should cover learning activities not only inside but also outside the classroom.

Unlike the traditional instructional method, FCM heavily emphasizes students' role as the main actor in learning, thus encouraging them to get actively involved in classroom discussions. In some cases, this idea can be difficult. Therefore, Bonyadi (2018) argued that FCM should be incorporated as a complimentary instruction instead of a regular substitute for conventional in-person classes due to several technical restrictions that students might encounter such as internet connection and device requirements. Milman (2012) suggested incorporating FCM for class activities that focus on procedural knowledge (the knowledge to conduct a specific skill or task).

## Research Implications

The direction of future studies can be directed to examine the application of FCM in different socio-cultural contexts. All studies derive from Asian regions such as Taiwan, China, Indonesia, and Türkiye, most of which consider English as a foreign language. Each country has its unique characteristics of learners and learning values. Conducting a collaborative study between two or several countries to compare the application of FCM might prove to be beneficial to identify the emerging issues in each country and generate valuable findings for future applications of this approach. Also, it is still difficult to find studies regarding FCM for ESL or EFL teaching that is originated in Africa, Europe, and The United States. More studies in different parts of the world that possess diverse socio-cultural backgrounds will be valuable references for future studies within this scope.

Other investigations can also address the adoption of mobile devices in the FCM setting. The ubiquity of mobile devices among students is an indication that mobility can be an essential element in learning. Various studies have provided evidence on how mobile devices can be harnessed to improve students' language skills and even some of which have combined the elements of FCM and mobile learning (e.g., Wu et al., 2017; Chen Hsieh et al., 2017). There are still various mobile learning platforms for the application of FCM such as WhatsApp, Instagram, and YouTube. Moreover, new technology such as augmented reality and artificial intelligence might provide new learning experiences for students during FCM. Future studies can be directed to investigate how these mobile platforms and new technology can affect students' language competence under the scheme of FCM.

## Limitations

This study is expected to serve as a valuable reference for future studies regarding the adoption of FCM in the scope of EFL/ESL contexts in higher education. However, the findings of this study yield some limitations that can be improved in future studies. For instance, all reviewed articles originate from Asia especially East Asia. The issue of generalization can be a concern as the findings might not be applicable to other studies held in countries with different socio-cultural backgrounds.

Furthermore, the limited access to particular journals has been an essential issue in this study. The majority of the articles are retrieved from open-access journals with the inclusion of Scopus-indexed criteria to address the quality issue. There are still many high-quality journals that might offer valuable information for the scope of this study. Thus, future studies can include articles from these journals for a more detailed and extensive discussion.

## CONCLUSIONS

FCM has shown its potential as an alternative instructional model that managed to elevate the quality of EFL/ESL learning. Moreover, multiple technological tools including teaching platforms and multimedia content were utilized to deliver learning content to learners. However, there is an indication of some technical and non-technical issues which impede the successful integration of this model. Future studies can address these issues to formulate strategies that provide solutions to these issues. It will also be interesting to describe the effects of mobile learning platforms and new technology such as augmented reality and artificial intelligence in the application of FCM.

From the previous research, this review formulates pedagogical implications for the future implementation of FCM. First, instructors need to initially identify students' famili-

arity with the medium used in FCM as they need to make sure that the model is practical for the class. Second, content should be made in a sort, concise, comprehensive, and attractive fashion so that students will be encouraged and need to make little effort to learn the content. Third, the lesson plan should be made creatively to engage students in an interactive discussion that occurs not only inside the classroom but also outside the classroom. To sum up, this review strengthens the idea of not lagging in the adoption of the latest instructional models and technological innovations. It also highlights the essence of students' and teachers' readiness for the latest trends in the educational field.

## DECLARATION OF COMPETING INTEREST

None declared.

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