RESEARCH ARTICLE

Flipped classroom pedagogy in higher education in EFL contexts: Findings and implications for further research

Mohammed Shamsul Hoque[1], Monjurul Islam[2*], Saraswathy Thurairaj[3], MK Puteri Zarina[4], Tamanna Farahdina[1]

[1] Department of English, Daffodil International University, Dhaka 1230, Bangladesh
[2] Literacies and Translations, School of Languages, Universiti Sains Malaysia, Penang 11800, Malaysia
[3] Faculty of Creative Industries, Universiti Tunku Abdul Rahman, Sg Long, Kajang 53300, Malaysia
[4] Universiti Pendidikan Sultan Idris, Tanjong Malim, Perak 35950, Malaysia

Abstract: The primary aim of this article is to examine the existing findings of flipped classroom (FC) pedagogy in higher education institutions (HEIs) for teaching English as a foreign language (EFL) context. Relevant studies have been scrutinised based on keywords, such as higher education, online learning, blended or hybrid teaching, flipped classrooms, and English language instruction in EFL environment. A total of 54 out of the selected 162 articles were analysed using the critical review process as the research methodology, and data were analysed using the content analysis technique. The findings revealed that flipped classroom (FC) had been applied in different parts of the world over many years. But, most of the studies are in science and engineering. Flipped classroom (FC) in the English as foreign language context has remained untapped. Most of the studies conclude that flipped classroom (FC) has more benefits compared to its drawbacks. This review makes several recommendations for further study.

Keywords: flipped classroom; online learning; EdTech pedagogy; EFL contexts; higher education

***Corresponding author:** Monjurul Islam, Literacies and Translations, School of Languages, Universiti Sains Malaysia, Penang 11800, Malaysia; monj0603@gmail.com

Received: January 29, 2023; **Accepted:** April 26, 2023; **Available online:** May 30, 2023

Citation: Hoque MS, Islam M, Thurairaj S, et al. (2023) Flipped classroom pedagogy in higher education in EFL contexts: Findings and Implications for further research. *Forum for Linguistic Studies* 5(1): 91–102. DOI: 10.18063/fls.v5i1.1534

1. Introduction

In connection with recent developments in teaching English as a foreign language (TEFL) methodology in higher education institutions (HEIs), different types of blended learning have been used in English as a foreign language (EFL) classroom in different countries. Flipped classroom (FC) pedagogy is one of them and has become popular among EFL practitioners (Jiang et al., 2021; Lee and Wallace, 2018; Su Ping et al., 2020; Tomas et al., 2019; Van Tran et al., 2022). Most of the works on FC pedagogy have been conducted in Europe and America in the areas of health sciences and engineering (Ito et al., 2022; Lindeiner-Strasky et al., 2022; Lombardini et al., 2018; Murillo-Zamorano et al., 2019; Rodríguez et al., 2019; Stöhr et al., 2020). Although it is common in Europe and America, the issue of FC pedagogy has been discussed in Asia, Southeast Asia, Africa, and the Middle East in EFL contexts (Elfeky et al., 2020; Hermansen and Saltkjel, 2022; Lee and Mar-

tin, 2020; Rawas et al., 2020). The wave of FC practice has reached up to Asia, but only two countries, Japan and Indonesia, may claim a considerable stake in FC practice. Therefore, there is room for a review of the current FC pedagogy within HEIs in EFL contexts.

English language teaching has been given priority worldwide, but the EFL approach has not been constantly updated with the shifting demands of learners (Jovanović et al., 2017; Korkmaz and Mirici, 2021). English language teaching within EFL contexts in the Global South still follows traditional classroom arrangements. Innovative educationalists (e.g., Bergmann and Sams, 2021; Nash, 2013) seek suitable teaching methods that enrich the existing learning environment and motivate learners to learn actively. FC pedagogy is one of the best options in recent times that provides an active learning environment by combining both face-to-face and online learning where teachers can nourish students' creativity in the subject matter (Evseeva and Solozhenko, 2015; Jdaitawi, 2020). Therefore, FC has emerged as an exclusive pedagogy that reverses traditional classroom practices. Although FC has been practiced in various fields, particularly in science and technology, the practice of FC pedagogy in the EFL context still gets very little attention from researchers. One emerging issue of FC pedagogy is that it can develop learners' higher-order thinking skills and their cooperative learning skills (Long et al., 2017). So, the present study provides a critical review of FC pedagogy as a blended learning strategy. Thus, the article aims to review the relevant peer reviewed articles to evaluate the current teaching practices using FC pedagogy. The study also attempts to ascertain the benefits and drawbacks of FC compared to other learning strategies, and critically studies why teachers use it and what gaps are filled by this pedagogy that are not filled by traditional face-to-face classroom teaching.

2. Objectives and significance of the study

Research into online learning, especially flipped classrooms, is essential given the expansion of e-learning in the age of globalization when mastery of EdTech strategies is tied to individual mobility and personal development. E-learning has been included in curricula more frequently and earlier than ever before, showing that policymakers are aware of this role of technology-supported education. The challenge we have is finding a new and effective balance between online education and face-to-face teaching, where FC pedagogy may be the ideal choice, especially after our return to campus after the pandemic, teaching and learning, and with improved EdTech abilities. In light of this context, the principal objective of this review is to investigate the existing researches of FC pedagogy and its implications, especially in the post-COVID-19 situations. This article explores the most frequent issues investigated in studies on FC pedagogy in settings of higher education in EFL. The review addresses the research questions mentioned below:

1) What are the most recurring topics explored in the studies on FC pedagogy within higher education institutions in EFL contexts?

2) What do questions need in further studies concerning FC pedagogy and EFL classroom practices?

3. Theoretical underpinnings

Researchers and academic scholars in HEIs have always been searching for innovative teach-

ing-learning pedagogies which are learner-orientated and more adoptable in different teaching-learning situations (Dutta, 2022; Islam et al., 2023; Nicolaides, 2012; Marie, 2021). FC pedagogy can be defined as an instructional method to blended learning in which traditional classroom practice followed by homework/assignment techniques are reversed by pre-supplied or EdTech integrated materials with instructional videos (Hung, 2017; Djamàa, 2020). In principle, FC pedagogy is grounded in theoretical understandings of active learning. However, though most of the recent studies pointed that "flipped classroom" first introduced by Bergmann and Sams (2012), the initial recognized use of the phrase "flipped classroom" to define the instructional technique was in 1997 by Baker (Talbert, 2017), who defined it in 2000 as his revelation for FC pedagogy. Finally, FC pedagogy converts the face-to-face class period that traditionalists use to provide on fundamental understandings with the Out-of-School-Hours (e.g., Islam et al., 2021) hat students used to ensure homework or apply understanding through active learning accomplishments, such as group discussions. In essence, FC pedagogy emphasizes learner preparation prior to class and learner engagement during and after the class.

Even though FC pedagogy can accommodate various teaching-learning strategies, it is one kind of blended learning versions (Fisher et al., 2020; Mayer et al., 2022). This pedagogy is broad, permitting inconsistency in the application of activities in indoor and outdoor settings. It deals with leaners' needs and supports independent learning (Hadwin et al., 2019). The key component in FC pedagogy is to motivate learners to utilise class time to develop their knowledge and escalate their capabilities by applying the new understanding independently. Consequently, according to Bloom's revised taxonomy (Darwazeh, 2017), FC pedagogy assists students to earn fundamental knowledge before the class time, and then helps to apply and analyse it during and after the class time. Studies show that FC instruction improves students' learning outputs, intellectual skills and assists to involve learners with learning materials and peer activities (Burford and Chan, 2017; Hung, 2017;). To conclude, it supports to engage students for their learning with improved motivation and active attention in classroom learning.

4. The design

This study uses critical review as the method to answer the research questions. For instance, according to Gough et al. (2017), critical review can be outlined as an assessment of current studies applying explicit, answerable effective research methods. As the study is based on existing articles, relevant literature has been examined, together with searches for peer-reviewed studies from Scopus, ERIC, Science Direct, EBSCO, IGI Global, Web of Science (WoS), Wiley Online Library and Google Scholar based on keywords, e.g., flipped classroom, online learning, blended learning, English language teaching in EFL contexts, content analysis, ELT materials design, and higher education. Following searches added selections of FC pedagogy with "tertiary level education" with abstract read for relevance and then only studies appropriate to EFL contexts with higher education were chosen for inclusion. The review was conducted during the period from June 10, 2016 to December 31, 2022 to attain a comprehensive understanding of the use of FC pedagogy in EFL contexts. The findings are revealed in the study, first from descriptive viewpoint and then using the content analysis method as an analytical tool. All data from various sources are acknowledged.

5. Inclusion and exclusion of articles

Articles were purposively identified based on their central focus on FC pedagogy at EFL contexts in the higher education level. Studies that engaged with FC pedagogy directly using qualitative or quantitative or mixed mood methods were included. Studies of online blended learning using educational technologies were also included. Articles that did not focus on FC pedagogy in EFL contexts of HEIs were excluded. Results from database searches were analyzed for inclusion according to several criteria, including a focus on existing practices of FC pedagogy, teachers' and students' perceptions and experiences, comments on teachers' work with reference to current technology-based teaching-learning environment, and the presentation of empirical data. The original literature set from 2016–2022 comprised 48 articles, with another 6 added more recently covering January 2022 to December 2022.

6. Analysis

The compiled literature was analysed to develop descriptions of the predominant themes in the data set (Braun and Clarke, 2006). Intersections between studies of EFL contexts FC pedagogy through technology supported pedagogies were enthusiastically recognized, including relationships with educational technology, higher education, EFL teachers' perception, technology supported teaching-learning, the purpose of FC teaching-learning, individualism and the effects of educational change. Each article was then re-analyzed for statements and ideas related to the key themes. These ideas were consolidated, with elements and contradictions identified and described.

7. Findings from FC practices

A review of literature on FC pedagogy shows that studies have been conducted on medical courses, health science and basic sciences (Demir et al., 2023; Feudel and Fehlinger, 2021; Rawas et al., 2020; Rodríguez et al., 2019; Sezer and Esenay, 2022). For example, the study of Rawas et al., (2020) employed a true experimental study design and found that the group based on in-person class activities performed better than the other group based on individual indoor class activities. Another study of Zhu et al. (2020) included dental, nursing, and higher vocational medical students in their study, and they employed a quasi-experimental design. The results of their study showed that overall, clinical medical students opined that FC influenced and improved their learning ability positively. In addition, the study of Rodríguez et al. (2019) employed a blend of quantitative statistical procedures and qualitative content study to examine the ways to implement FC and foster the improvement of critical thinking and creativity skills of health science students. The result of the study revealed that FC produced better learning results than traditional methods. Similarly, another study (i.e., Cotta et al., 2016) was conducted on FC in the context of second language acquisition among pharmacy course students. Cotta et al. (2016) employed quasi-experimental investigation to examine the usefulness of FC pedagogy, whether FC helps to improve academic performance of the students and students' learning in pharmacy course. In a recent study, Sezer and Esenay (2022) also applied quasi-experimental methods to nursing students to look for the effectiveness of FC pedagogy and other online learning approaches. This study did not find any significant differences and concluded that the students were highly satisfied with FC pedagogy. Thus, the findings of these studies demonstrate

that the students' satisfaction is significantly better with FC pedagogy than traditional classroom instruction.

Some other studies have been conducted on Applied Physics (i.e., Kuo et al., 2022; Stöhr et al., 2020), engineering (Lin and Hwang, 2018), and Science background students (Lai, 2021; Nja et al., 2022). For example, the study of Stöhr et al. (2020) investigated the efficacy of online flipped classroom. Their study found that the online flipped format revealed significant polarization in the performance of the students. Lin and Hwang (2018) conducted study on flipped classroom learning among software engineering students and developed a smart learning diagnostic system, employing an experimental research design. The result of the findings revealed that the use of FC pedagogy assisted the students to develop their learning motivation, learning achievement, problem solving ability, and learning attitude. In addition, Nja et al. (2022) employed a quasi-non-equivalent, non-randomized factorial research design among Chemistry second-year undergraduate students to understand their attitude and academic achievement in a flipped classroom. This study used two groups of students, among which one group was taught applying the conventional teaching approach while the other was taught using FC pedagogy. The result of the study showed that students' attitudes towards and academic achievement in Chemistry lessons were significantly higher in FC group students than in the conventional group.

Employing FC pedagogy and an experimental research design, Elfeky et al. (2020) conducted one study on the students of Home Economics, and the results of the investigation showed that students who learnt course content under FC learning had better achievement and performance than the other group. The study of Lombardini et al. (2018) used a quasi-experimental research design among microeconomics course students. The results of the study showed that students felt that they had higher level of performance and achievement in their flipped classroom learning courses. Moreover, Murillo et al. (2019) employed FC learning among business and economics faculty students, using structural equation modelling. The results of their study highlighted that FC pedagogy would require instructional methods for generation in the 21st century.

8. Findings from EFL contexts

In contexts of an EFL classroom, Fathi and Rahimi (2022) conducted quasi-experimental research to explore the impact of FC pedagogy among writing class students. They involved two groups of students: control and experimental groups with 24 and 27 EFL students. The findings concluded that FC students significantly developed and outperformed the non-flipped classroom. In addition, FC pedagogy is applied to Bhutanese undergraduate students to understand their perceptions and attitudes in learning grammar (Singay, 2020). Findings from the survey data demonstrated that FC pedagogy supported learners to learn grammar. Students also showed positive attitudes and perceptions towards the better relationship and collaborative learning approach. Similarly, according to Liu et al. (2019), FC has proven beneficial to students' learning achievement and motivation in English grammar learning classes in the EFL context. Finally, Lee and Wallace (2018) employed an action research method to understand students' perceptions and outcomes regarding FC pedagogy. They enrolled 79 undergraduate students and divided them into two groups. Out of them, 39 were taught English using communicative language teaching approach whereas 40 learned English using FC pedagogy. Findings posited students using FC achieved higher average scores in their final tasks.

Moreover, the study demonstrated that most of the students enjoyed FC and became more engaged in the learning process than those in the non-flipped classes.

In term of English lecturers' perception and involvement in FC pedagogy, Gok et al. (2021) undertook a study to understand the effects of FC pedagogy among group pre-service teachers in advanced reading and writing courses. The study involved two groups: a flipped classroom group and a non-flipped classroom group. The results revealed a significant decrease in foreign language classroom anxiety and foreign language reading anxiety levels in the flipped classroom group compared to the non-flipped group. Similarly, Basal (2015) employed FC pedagogy under a qualitative research design and investigated the insights into the perceptions of the potential English language teachers in Turkey. The result of the investigation revealed that English language lecturers showed positive observations towards FC pedagogy. In addition, in the context of foreign language classrooms, Jiang et al. (2021) conducted a study using purposive sampling to understand Chinese English language teachers' perception of, with or without flipped teaching experience. The findings of the study showed that lecturers had positive attitude to use FC pedagogy with individual variations across gender, prior experience and the type of courses. Finally, like skills development in other disciplines, FC pedagogy assists students to develop their English language proficiency too. Wang et al. (2018) claimed that the use of FC in foreign language classrooms is important for improving the oral competence abilities of learners both more effectively and more quickly. The flipped group in the study progressed through the curriculum at a faster rate and used 25% less face-to-face time. Whereas these two criteria did not significantly correlate with the competence assessments, learners in the flipped group also showed greater (outside of class) time investment in their learning and more positive opinions regarding the course.

9. Benefits and drawbacks of FC pedagogy

The findings from different studies reveal that FC pedagogy has both affirmative and adverse effects. Recent researches have exposed that FC has numerous benefits in enhancing pupils' interactive and collaborative learning environment (Adhami and Taghizadeh, 2022; Docherty et al., 2022; Hwang and Chen, 2019). For instance, according to Berrett (2012), one of the benefits of FC pedagogy is that pupils in the FC class get many chances to improve their critical thinking skills under class teachers' direct support and to do more peer activities than in the traditional classroom settings. In addition, Alsowat (2016) had taken another study applying a mixed-method research design. The study investigated the effectiveness of FC on graduate students' English higher-order thinking skills, engagement and satisfaction. The study revealed statistically significant differences between the two groups and concluded that FC pedagogy assisted in improving the effectiveness of students' English higher-order thinking skills, engagement and satisfaction. That is why, it has been defined by several student-centred learning approaches that FC motivates students to engage in learning and improve their learning outcomes (Lee and Wallace, 2018). By moving traditional lecture-based classroom teaching to virtual classroom settings, the basic objective of FC pedagogy is to focus on pupils' knowledge and recollection that support students' knowledge building for developing their higher-order skills (Zou et al., 2020). To sum up, FC can provide several benefits: first of all, it provides free classroom time; secondly, it gives students opportunities for personalized learning; thirdly, it is one of the best student-centred learning approaches; fourthly, it assists to build a continuous connection between students and teachers; and finally, it increases pupils' inspiration for

a learning environment. Thus, in a study, He (2020) concluded that FC teaching motivates students' interest in learning English, cultivates autonomous and cooperative learning abilities and enhances their English learning proficiency.

However, despite various positive aspects of FC pedagogy, literature reveals that several drawbacks come along the way. According to Fisher et al. (2020), while FC classroom can be supportive and contribute to better learning outcomes at the group level, it may not be the same supportive and better learning experience for all students at the individual level. In recent studies, it has demonstrated that FC teaching characterizes an instructional challenge to teachers, especially those who follow teacher-centred classroom practices. For instance, Su Ping et al. (2020) identified some shortcomings of FC pedagogy that included the feeling of boredom because it was time-consuming. Moreover, like teachers' difficulty to use FC pedagogy, pupils' reluctance to watch the video lectures, students' being accustomed to passive learning, and students' inadequate technology literacy or availability may question the adequacy of flipped classroom teaching. Thus, Cai et al. (2019) rightly concluded that there are several issues that may take inexcusable intention of teachers' use of FC pedagogy.

10. Discussion, implications, and conclusion

The most significant implication of FC pedagogy is that it improves learner-centered learning environment. Flipped classroom increases bonding between teachers and students. Most of previous studies concluded that FC assists to build conducive learning environment (e.g., Steen-Utheim and Foldnes, 2018). Teachers with FC strategies perform like a counselor and help to develop cooperation and collaboration in class. According to Marzano (2017: 98), "Arguably, keeping students engaged is one of the most important considerations for the classroom teacher." FC pedagogy is didactically rigorous because it builds autonomous learning environment. It enhances learner-centred instruction and advocates constructivism. FC pedagogy offers flexibility for both teaching and learning. According to Bergmann and Sams (2012), teachers can apply various techniques in flip classroom. In fact, FC focuses on active learning and students cannot get away with being passive learners (Gough et al., 2017).

But there are areas that FC needs to develop itself to be a new approach to EFL methods acknowledged worldwide. The policy needs to incorporate evidence-based research on development of FC pedagogy, create a blended education accelerator to improve current educational practices. Application of Artificial Intelligence (AI) and Machine Learning to accelerate higher education, customizing learning to a learner needs and interests, and modernizing the process is another necessity for such a policy. EdTech integration is for pace and quality; instructional design components to enhance interest of learners, and bringing in enjoyment and "fun" in teaching-learning are some other requirements.

To support students-centred teaching-learning environment, FC pedagogy is helpful in merging both online and face-to-face classroom learning. In fact, it is one of the best methods or pedagogical strategies that support students to continue learning using their own environment, skills and choices. COVID-19 situations got the education system stuck for some time. Now to regain its previous position, the curriculum makers should consider FC pedagogy as a new gateway not only for an improvement on current educational scenario but also empower it to face any unforeseen obstacles

like the recent pandemic. Further research will need to focus on aspects like how to develop FC pedagogy as an acknowledged approach in an EFL context; how strategies for learner empowerment through a variety of activities combining to create a tangible method to support the proposed FC approach and on what ground this new FC pedagogy can evolve into a new approach with suggestions for designing corresponding methods and probable strategies to go along with the proposed method supporting the new approach/theory of FC. As the FC pedagogy is an offshoot of the hybrid method, blended and distance learning, this proposition of framing a novel approach of FC pedagogy may immensely benefit from a group of avid researchers coming from backgrounds like TEFL, TESOL, teacher training or the pedagogical field.

11. Limitations and recommendations for further research

The present study shares the same limitations as earlier studies in this regard. We are aware that just 48 international journals published between 2016 and 2022 are covered by this critical assessment. As a result, our discussions should be regarded with caution. We also emphasize the necessity of keeping track of FC pedagogical development as reported in relevant international journals. We intend to carry out additional evaluations as required in the future and provide the chosen articles' bibliographies as an appendix to this review.

We have already summarized the potential contributions that research on FC pedagogy could bring after reviewing relevant journal articles. More importantly, we have pinpointed the gaps that need to be filled by FC pedagogy research in the future. We would like to suggest more analysis of FC pedagogy in EFL settings. We also acknowledge how difficult it is to execute any e-learning or technology embedded EFL curriculum due to the wide variety of students and learning environments. We also urge coordinated study into a wide range of topics linked to English language instruction in EFL environments, such as, language policies for minority learners, their implementation, and their learning experiences, special provisions for physically or emotionally challenged learners of EFL. Despite these encouraging results, additional research is required to determine whether FC pedagogy is more effective than traditional classroom methods for teaching English. We would also like to encourage academicians to consider how FC pedagogy is used in EFL settings to support interactive and cooperative learning for teachers.

12. Conclusion

The present study investigated the existing findings of FC pedagogy in higher education to teach English as a foreign language (EFL) in various circumstances, which have both advantages and disadvantages. According to the findings of the study, FC should use both synchronous and asynchronous teaching and learning techniques. Our analysis concludes that different language learning activities were commonly used in the FC classroom setting, and students' perceptions of their interactions with teachers were positive. Moreover, the findings of the present study indicate that FC is becoming increasingly popular among teachers and students. In addition to providing extra time and shortening distances, flipped classroom pedagogy has created a relaxed environment for students to freely converse and share their thoughts without fear of humiliation or lack of self-confidence. Consequently, such platforms can assist learners in overcoming numerous speaking challenges like FLA, and improving their speaking skills. Finally, teaching-learning approach in FC pedagogy is

also considered by users as an efficient concept. Academicians are always ready to welcome any innovation in teaching-learning pedagogy. In this list, FC is one of the best options for modernizing the traditional classroom to a smarter one. Therefore, academics believe that FC pedagogy facilitates systematic and unified arrangement of online and face-to-face classroom teaching-learning accomplishments, ensuring teacher empowerment, student engagement, enjoyment and accomplishment. Whether students watch video lessons before the classroom teaching or after attending the class lecture may not end up in trouble at all; the significant matter is that students are intensely and actively involved in the actual problem-solving activities.

Ethical approval statement

This article does not contain any studies with human participants performed by any of the authors.

Data availability statement

Data sharing is not applicable to this article as no datasets were generated or analysed during the current study.

Conflict of interest

There are no potential conflicts of interest related to this study.

References

Adhami N and Taghizadeh M (2022) Integrating inquiry-based learning and computer supported collaborative learning into flipped classroom: Effects on academic writing performance and perceptions of students of railway engineering. *Computer Assisted Language Learning*. DOI: 10.1080/09588221.2022.2046107

Alsowat H (2016) An EFL flipped classroom teaching model: Effects on English language higher-order thinking skills, student engagement and satisfaction. *Journal of Education and Practice* 7(9): 108–121.

Basal A (2015) The implementation of a flipped classroom in foreign language teaching. *Turkish Online Journal of Distance Education* 16(4): 28–37. DOI: 10.17718/tojde.72185

Bergmann J and Sams A (2012) Flip your classroom: Reach every student in every class every day. Arlington: ISTE.

Berrett D (2012) How 'flipping' the classroom can improve the traditional lecture. *The Chronicle of Higher Education* 12(19): 1–3.

Braun V and Clarke V (2006) Using thematic analysis in psychology. Qualitative Research in Psychology 3(2): 77–101. DOI: 10.1191/1478088706qp063oa

Burford MR and Chan K (2017) Refining a strategic marketing course: Is a 'flip'a good 'fit'?. *Journal of Strategic Marketing* 25(2): 152–163. DOI: 10.1080/0965254X.2016.1182578

Cai J, Yang HH, Gong D, et al. (2019) Understanding the continued use of flipped classroom instruction: A personal beliefs model in Chinese higher education. *Journal of Computing in Higher Education* 31(1): 137–155. DOI: 10.1007/s12528-018-9196-y

Cotta KI, Shah S, Almgren MM, et al. (2016) Effectiveness of flipped classroom instructional model in teaching pharmaceutical calculations. *Currents in Pharmacy Teaching and Learning* 8(5): 646–653. DOI: 10.1016/j.cptl.2016.06.011

Darwazeh AN (2017) A new revision of the [revised] bloom's taxonomy. *Distance Learning* 14(3): 13–28.

Demir M, Zengin Y, Özcan Ş, et al. (2023) Students' mathematical reasoning on the area of the circle: 5E-based flipped classroom approach. *International Journal of Mathematical Education in Science and Technology* 54(1): 99–123. DOI: 10.1080/0020739X.2022.2101955

Djamàa S (2020) Lecture in the living room, homework in the classroom: The Effects of flipped instruction on graduate EFL students' exam performance. *Computers in the Schools* 37(3): 141–167. DOI: 10.1080/07380569.2020.1795513

Docherty PD, Zaka PA, and Fox-Turnbull W (2022) A quantitative analysis of the short-term and mid-term benefit of a flipped classroom for foundational engineering dynamics. *Research Papers in Education* 37(6): 860–874. DOI: 10.1080/02671522.2020.1864773

Dutta K (2022) Pandemic-proof teaching: Blended learning infrastructure to support a pivot to hybrid/online pedagogy. In: Singh UG, Nai CS, Blewett C, and Shea T (eds.) *Academic Voices: A Conversation on 21st Century Higher Education*. Oxfordshire: Chandos Publishing, pp.129–145. DOI: 10.1016/B978-0-323-91185-6.00001-X

Elfeky AIM, Masadeh TSY, and Elbyaly MYH (2020) Advance organizers in flipped classroom via e-learning management system and the promotion of integrated science process skills. *Thinking Skills and Creativity* 35: 100622. https://doi.org/10.1016/j.tsc.2019.100622

Evseeva A and Solozhenko A (2015) Use of flipped classroom technology in language learning. *Procedia-Social and Behavioral Science*s 206: 205–209. DOI: 10.1016/j.sbspro.2015.10.006

Fathi J and Rahimi M (2022) Examining the impact of flipped classroom on writing complexity, accuracy, and fluency: A case of EFL students. *Computer Assisted Language Learning* 35(7): 1668–1706. DOI: 10.1080/09588221.2020.1825097

Feudel F and Fehlinger L (2021) Using a lecture-oriented flipped classroom in a proof-oriented advanced mathematics course. *International Journal of Mathematical Education in Science and Technology* 54(1): 46–73. DOI: 10.1080/0020739X.2021.1949057

Fisher RL, Ferriere R, and Rixon A (2020) Flipped learning: An effective pedagogy with an Achilles' heel. *Innovations in Education and Teaching Internationa*l 57(5): 543–554. DOI: 10.1080/14703297.2019.1635904

Gok D, Bozoglan H, and Bozoglan B (2021) Effects of online flipped classroom on foreign language classroom anxiety and reading anxiety. *Computer Assisted Language Learning* 36(4): 840–860. DOI: 10.1080/09588221.2021.1950191

Gough D, Oliver S, and Thomas J (2017) *An Introduction to Systematic Reviews*. Thousand Oaks: Sage Publications.

Hadwin AF, Davis SK, Bakhtiar A, and Winne PH (2019) Academic challenges as opportunities to learn to self-regulate learning. In: Askell-Williams H and Orrell J (eds.) *Problem Solving for Teaching and Learning*. London: Routledge, pp.34–47.

He J (2020) Research and practice of flipped classroom teaching mode based on guidance case. *Education and Information Technologies* 25(4): 2337–2352. DOI: 10.1007/s10639-020-10137-z

Hermansen Å and Saltkjel T (2022) Doing it step by step: A flipped classroom approach to teaching statistical analysis in social work. *Social Work Education*. DOI: 10.1080/02615479.2022.2123912

Hung HT (2017) Design-based research: Redesign of an English language course using a flipped classroom approach. *Tesol Quarterly* 51(1): 180–192. DOI: 10.1080/15391523.2021.1962453

Hwang GJ and Chen PY (2019) Effects of a collective problem-solving promotion-based flipped classroom on students' learning performances and interactive patterns. *Interactive Learning Environments*. DOI: 10.1080/02615479.2022.2123912

Islam MM, Hoque S, and Hoque KE (2021) Inequalities in private tutoring of English: A phenomenological qualitative study based on Bangladeshi higher secondary students. *Qualitative Report* 26(3): 734–750. DOI: 10.46743/2160-3715/2021.4429

Islam M, Mazlan NH, Al Murshidi G, et al. (2023) UAE university students' experiences of virtual classroom

learning during Covid 19. *Smart Learning Environments* 10(1): 1–16. DOI: 0.1186/s40561-023-00232-2

Ito A, Isohama Y, and Watanabe K (2022) Comparison of flipped and traditional lecture-based classrooms for Kampo (traditional Japanese medicine) education in a medical school. *International Journal of Educational Research Open* 3: 100–156. DOI: 10.1016/j.ijedro.2022.100156

Jdaitawi M (2020) Does flipped learning promote positive emotions in science education? A comparison between traditional and flipped classroom approaches. *Electronic Journal of e-Learning* 18(6): 516–524. DOI: 10.34190/JEL.18.6.004

Jovanović J, Gašević D, Dawson S, et al. (2017) Learning analytics to unveil learning strategies in a flipped classroom. *The Internet and Higher Education* 33(4): 74–85. DOI: 10.1016/j.iheduc.2017.02.001

Jiang L, Zang N, Zhou N, and Cao H (2021) English teachers' intention to use flipped teaching: Interrelationships with needs satisfaction, motivation, self-efficacy, belief, and support. *Computer Assisted Language Learning* 35(8): 1890–1919. DOI: 10.1080/09588221.2020.1846566

Korkmaz S and Mirici İH (2021) Converting a conventional flipped class into a synchronous online flipped class during COVID-19: University students' self-regulation skills and anxiety. *Interactive Learning Environments*. DOI: 10.1080/10494820.2021.2018615

Kuo YC, Lin YH, Wang TH, et al. (2022) Student learning effect using flipped classroom with WPSA learning mode—An example of programming design course. *Innovations in Education and Teaching International*. DOI: 10.1080/14703297.2022.2086150

Lai HM (2021) Understanding what determines university students' behavioral engagement in a group-based flipped learning context. *Computers & Education* 173: 104–290. DOI: 10.1016/j.compedu.2021.104290

Lee G and Wallace A (2018) Flipped learning in the English as a foreign language classroom: Outcomes and perceptions. *TESOL Quarterly* 52(1): 62–84. DOI: 10.1002/tesq.372

Lee Y and Martin KI (2020) The flipped classroom in ESL teacher education: An example from CALL. *Education and Information Technologies* 25(4): 2605–2633. DOI: 10.1007/s10639-019-10082-6

Lin CJ and Hwang GJ (2018) A learning analytics approach to investigating factors affecting EFL students' oral performance in a flipped classroom. *Journal of Educational Technology & Society* 21(2): 205–219.

Lindeiner-Stráský KV, Stickler U, and Winchester S (2022) Flipping the flipped. The concept of flipped learning in an online teaching environment. *Open Learning: The Journal of Open, Distance and e-Learning* 37(3): 288–304. DOI: 10.1080/02680513.2020.1769584

Liu C, Sands-Meyer S, and Audran J (2019) The effectiveness of the student response system (SRS) in English grammar learning in a flipped English as a foreign language (EFL) class. *Interactive Learning Environments* 27(8): 1178–1191. DOI: 10.1080/10494820.2018.1528283

Lombardini C, Lakkala M, and Muukkonen H (2018) The impact of the flipped classroom in a principles of microeconomics course: evidence from a quasi-experiment with two flipped classroom designs. *International Review of Economics Education* 29: 14–28. DOI: 10.1016/j.iree.2018.01.003

Long T, Cummins J, and Waugh M (2017) Use of the flipped classroom instructional model in higher education: Instructors' perspectives. *Journal of Computing in Higher Education* 29(2): 179–200. DOI: 10.1007/s12528-016-9119-8

Marie SMJA (2021) Improved pedagogical practices strengthens the performance of student teachers by a blended learning approach. *Social Sciences & Humanities Open* 4(1): 100–199. DOI: 10.1016/j.ssaho.2021.100199

Marzano RJ (2017). *The Art and Science of Teaching: A Comprehensive Framework for Effective Instruction*. Association for Supervision & Curriculum Development.

Mayer JH, Quick R, Sayar S, and Siebert J (2022) Switching to flipped classrooms—One and the same training challenged by practitioners and students. *Accounting Education.* DOI: 10.1080/09639284.2022.2060047

Murillo-Zamorano LR, Sánchez JÁL, and Godoy-Caballero AL (2019) How the flipped classroom affects knowledge, skills, and engagement in higher education: Effects on students' satisfaction. *Computers & Education* 141: 103–608. DOI: 10.1016/j.compedu.2019.103608

Nash R (2013) *The Active Classroom: Practical Strategies for Involving Students in the Learning Process*. Thou-

sand Oaks: Corwin Press.

Nicolaides A (2012) Innovative teaching and learning methodologies for higher education Institutions. *Educational Research* 3(8): 620–626.

Nja CO, Orim RE, Neji HA, et al. (2022) Students' attitude and academic achievement in a flipped classroom. *Heliyon* 8(1): e08792. DOI: 10.1016/j.heliyon.2022.e08792

Rawas H, Bano N, and Alaidarous S (2020) Comparing the effects of individual versus group face-to-face class activities in flipped classroom on Student's test performances. *Health Professions Education* 6(2): 153–161. DOI:10.1016/j.hpe.2019.06.002

Rodríguez G, Díez J, Pérez N, et al. (2019) Flipped classroom: Fostering creative skills in undergraduate students of health sciences. *Thinking Skills and Creativity* 33: 100575. DOI: 10.1016/j.tsc.2019.100575

Sezer TA and Esenay FI (2022) Impact of flipped classroom approach on undergraduate nursing student's critical thinking skills. *Journal of Professional Nursing* 42: 201–208. DOI: 10.1016/j.profnurs.2022.07.002

Singay S (2020) Flipped learning in the English as a second language classroom: Bhutanese students' perceptions and attitudes of flipped learning approach in learning grammar. *Indonesian Journal of Applied Linguistics* 9(3): 666–674.

Steen-Utheim AT and Foldnes N (2018) A qualitative investigation of student engagement in a flipped classroom. *Teaching in Higher Education* 23(3): 307–324. DOI:10.1080/13562517.2017.1379481

Stöhr C, Demazière C, and Adawi T (2020) The polarizing effect of the online flipped classroom. *Computers & Education* 147: 103789. DOI: 10.1016/j.compedu.2019.103789

Su Ping RL, Verezub E, Adi Badiozaman IFB, and Chen WS (2020) Tracing EFL students' flipped classroom journey in a writing class: Lessons from Malaysia. *Innovations in Education and Teaching International* 57(3): 305–316. DOI: 10.1080/14703297.2019.1574597

Talbert R (2017) *Flipped Learning: A Guide for Higher Education Faculty*. Sterling: Stylus Publishing.

Tomas L, Evans NS, Doyle T, and Skamp K (2019) Are first year students ready for a flipped classroom? A case for a flipped learning continuum. *International Journal of Educational Technology in Higher Education* 16: 5. DOI: 10.1186/s41239-019-0135-4

Van Tran H, Thanh Le H, Chi Phan T, et al. (2022) Flipped classroom in online teaching: A high school experience. *Interactive Learning Environments*. DOI: 10.1080/10494820.2022.2120020

Wang J, An N, and Wright C (2018) Enhancing beginner learners' oral proficiency in a flipped Chinese foreign language classroom. *Computer Assisted Language Learning* 31(5–6): 490–521. DOI: 10.1080/10494820.2018.1528283

Zou D, Luo S, Xie H, and Hwang GJ (2020) A systematic review of research on flipped language classrooms: Theoretical foundations, learning activities, tools, research topics and findings. *Computer Assisted Language Learning* 35(8): 1811–1837. DOI: 10.1080/09588221.2020.1839502