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Face-to-Face or Flipped Learning Classroom: Which Method Enhances Iranian EFL Sixth-Grade Students' Self-Efficacy in Virtual Learning Environment?

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Abstract

The realm of education has experienced significant transformation driven by swift advancements in technology, leading to the rise of virtual learning as a key instructional approach. Within this context, the flipped classroom (FC) model has gained prominence as a modern, innovative methodology. This model inverts the traditional classroom structure, contrasting with conventional classroom practices by frequently incorporating instructional content through videos, or PowerPoint presentations. The study investigated the effect of FC model on sixth-grade students' self-efficacy in Iran. Employing a quantitative research approach, 100 male sixth-grade students aged 12-13 were selected based on their Quick Oxford Placement test scores. Then, these participants were divided into a control group, experiencing traditional classroom teaching, and an experimental group, undergoing FC instruction using the Shad application platform. The study spanned two months, covering key English grammar objectives. Both groups took a pretest at the beginning, followed by 16 sessions of grammar instruction. A posttest assessed the teaching impact. Independent-samples t tests compared the two groups' posttest mean scores. The findings demonstrated a significant performance improvement in the experimental group when compared to the control group. This suggests potential benefits for educators, policymakers, and institutions in adopting FC methods to improve academic literacy and student perceptions of virtual learning. Further research is recommended to evaluate the FC model's long-term effects and adaptability across different educational settings.

Keywords: Face-to-face learning, flipped learning classroom, online learning, self-efficacy

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1. Introduction

In the latter part of the 20th century and the onset of the 21st century, the emergence of technology, especially in the realms of ICT, has had a profound impact on many facets of individual life. With the diminishing barriers of time and space, our planet has evolved into what can be described as a global village (Lee & Lee, 2010). The role of ICT has been substantial and is presently transforming several sectors, education being a prime instance. This transformation includes a considerable alteration of conventional educational methodologies.

The extensive adoption of Information and Communication Technology and the deep integration of distance communication methods into the core of education systems have led to a transformation in teaching tools and methodologies (Alexander, 2001). Consequently, education driven by ICT, akin to technological advancements in other fields, has experienced evolution and growth in recent years. The evolution within the field of education has manifested in diverse manifestations, including computer-based instruction, distance learning, online education, resource-driven learning, web-centered instruction, technology-enhanced learning, and digital educational platforms, as noted by Alexander (2001).

The swift pace of technological advancement globally has underscored that conventional educational approaches are inadequate to fulfill modern student requirements. Efforts have focused on cultivating students as creators and producers rather than just consumers of knowledge. This entails furnishing innovative pedagogies tailored to students' personal and social needs that unlock new possibilities in science and technology fields. Moreover, the recent years have witnessed the rise of novel constructivist-aligned teaching methods, marking a shift from behaviorist knowledge transfer paradigms. The emphasis is now on learners actively building knowledge and meaning based on their experiences rather than passively receiving instruction. Overall, modernization has necessitated more student-centered, creative, and adaptive education strategies to replace outdated instructional techniques.

There may be recollections of times spent passively in classrooms, marked by frustration while being subjected to instruction from educators who delivered content without fostering engagement. Such teacher-led environments traditionally emphasized the student's role as merely a passive recipient, restricted to their seating arrangements. The teacher-centered methodology, which has been historically dominant, established the educator as the primary speaker: initiating questions, accepting responses, and utilizing the blackboard, as students passively engaged in notetaking. This approach has significantly elevated the teacher's role to a central and influential position within the classroom dynamics (Hadadi & Sadri, 2020).

This gap has been addressed by the swift progression of technology in the educational field, paving the way for the development of an innovative teaching approach widely known as blended learning. In accordance with the explanation provided by Bonk and Graham in 2012, this novel approach combines traditional education with online elements to cultivate an environment that promotes collaboration and centers around the learner.

A fundamental component of blended learning is the concept of flipped instruction. This method reconfigures the educational process, granting learners increased opportunities for study before, during, and after classroom sessions, thereby enriching their educational journey (Fathi et al., 2021; Kushairi & Ahmi, 2021; Sams & Bergmann, 2012).

Lage et al. (2000) were the pioneers of the FC concept. However, it was Bergman and Sams who significantly developed this innovative approach. In their 2012 publication, *Flip Your Class*, they popularized the term *Flipped Class*. They outlined in their book various challenges students face in learning, such as lateness, shallow understanding of concepts, ineffective study methods, diminished motivation, and disinterest in certain topics. To tackle these issues and customize the learning experience for each student, they recommended the use of the FC approach (Fathi & Rahimi, 2020).

This model, which emerged as a progressive educational paradigm in the final decade of the 20th century, aims to foster inclusive learning and cater to student needs using straightforward technology, as outlined by Fathi and Rahimi (2020). This innovative teaching approach, known as flipped learning, inverts the traditional roles of classroom instruction and homework. In contrast to standard teaching methods where students primarily listen to lectures in class and do assignments at home, flipped learning reverses this sequence. This approach to instruction has demonstrated its merit in maximizing the utility and effectiveness of classroom time.

Many educators have recognized the positive effects of the FC model in learning (Lockwood & Folse, 2014; Sams & Bergmann, 2012; Strayer, 2012; Zhu, 2021). However, further empirical studies are needed to verify its effectiveness in enhancing language learning. Flipped instruction aligns well with contemporary language acquisition theories, making it a viable method for second language education. Mehring (2016) underscores the relevance of FC in second language (L2) learning by offering a toolkit for its implementation in L2 contexts. The flipped classroom approach encourages peer review, collaborative learning, increased engagement, and productive discussions, enabling students to assimilate knowledge actively (Butt, 2014; Hawks, 2014; Lee, 2021; Talbert, 2012).

In line with Bandura's (1977) social-cognitive theory, self-efficacy is identified as a pivotal element influencing human actions across various domains such as education, career, family, and social interactions.

Self-efficacy refers to a student's belief in their own ability to achieve success. Learning computer skills, for instance, is one area where self-efficacy plays a role. It is generally posited that the FC model enhances the accomplishments of second language (L2) learners in English classes, as supported by research (Hung, 2017; Jiang et al., 2021; Mehring, 2016).

Building upon the recognized significance of self-efficacy in educational settings, particularly in the acquisition of skills such as computer literacy and second language learning, this study aims to investigate the impact of the Flipped Classroom (FC) model on the self-efficacy of sixth-grade students. Consequently, the main purpose of this study was to examine the effect of the FC model on the self-efficacy of sixth graders. Additionally, the study sought to determine if there was a notable distinction and difference in the effectiveness of the FLC approach in enhancing the self-efficacy of sixth graders in Iran.

Does flipped instruction significantly affect the self-efficacy of sixth-grade elementary students compared to those taught through traditional methods, as observed between the experimental and control groups?

2. Literature Review

2.1. Definitions of FC Model

The phrases *flipped classroom* and *flip teaching* are relatively new in the field of education, but the pedagogical approach Sams and Bergman (2012) stand for is not (Berrett, 2012; Davies, Dean, & Ball, 2013).

In the last decade, various terminologies have emerged in scholarly literature to characterize this model. This method reverses the traditional format of lectures conducted in class and homework assigned outside. This method is also known as flipped learning, just-in-time teaching, and inverted classroom (Fulton, 2012; Hung, 2017).

This model subverts the conventional teaching method where direct instruction occurs in class and content-related homework is assigned afterward. Instead, it flips this arrangement, enabling students to engage with instructional content at home. This shift liberates class time for a range of learning activities (Bergmann & Sams, 2013).

According to Davies and colleagues (2013), the FC technique has become more popular because of advances in technology and the greater accessibility of computers and other mobile devices.

Abeysekera and Dawson (2015) posited that their delineation of the Flipped Classroom (FC) model stands as a comprehensive aggregation of all existing definitions. This inclusivity stems from their deliberate avoidance of asserting the model's advantages, refraining from critique of traditional instructional approaches, not presuming the intentions behind its adoption, or dictating specific technological requirements.

"What is traditionally done in class is now done at home, and what is traditionally done as homework is now completed in class" (p.13) is how Sams and Bergmann (2012) characterized the FC model.

2.2. Theoretical Underpinnings of FC Model

The development of the FC model is grounded in a robust theoretical framework that directs its progression. It is underpinned by three principal theoretical pillars: *constructivism*, *social learning theory*, and *experiential learning theory*. These foundational theories provide a comprehensive basis for comprehending how students learn, thereby assisting educators in designing and implementing effective instructional environments tailored to the flipped learning approach.

2.2.1. Constructivism

Constructivism is the prevailing educational theory that has a major impact on the modern learning-teaching process. Constructivist teaching methods and learning practices are heavily influenced by the theories of Piaget and Vygotsky (Tzuo, 2007).

The constructivist idea that students ought to take an active role in their own education is best illustrated by the flipped style of instruction. Constructivism maintains that students actively produce meaning and knowledge through their interactions and experiences with the outside world.

This idea has important ramifications for educational practice since it suggests that students achieve optimal learning outcomes when they are actively engaged in the learning process and given chances to apply what they have learned in practical settings. Several studies evaluating research on flipped classrooms have emphasized the constructivist roots of active, peer, and collaborative learning (Eppard & Rochdi, 2017; Zuber, 2016).

2.2.2. Bandura's Social Learning Theory

The FC model is also grounded in Bandura's social learning theory (1977), which elucidates the mechanisms of learning and its sustainability. According to Bandura (1977), a student's conduct, environmental factors, and previous experiences collectively shape future behaviors. He emphasized learning as a social activity, with knowledge acquisition occurring through interactions with peers and adults (Zarinfard et al., 2021)

Expanding on this in 1997, Bandura highlighted that students learn new information and behaviors by observing their peers. He identified learners as either observational or modelers, focusing on the cognitive, environmental, and behavioral aspects influencing human actions. In the context of flipped classrooms, the principles of social learning theory are apparent. Students engage with media presentations that demonstrate desired behaviors (Alvarez,

2012; Fulton, 2012a).

Aligned with Bandura's Social Learning Theory, the flipped classroom employs web videos, teacher-made films, and other media for conceptual modeling. This leads to students actively retaining, replicating, and applying the concepts in exercises and real-world scenarios. While the flipped learning model may not solve all challenges of traditional learning environments, it addresses several, notably enhancing student engagement, providing immediate feedback, and encouraging collaborative learning. These elements contribute to longer retention and practical application of learned concepts (Alvarez, 2012; Bergmann & Sams, 2012b; Berrett, 2012).

2.2.3. Experiential Learning Theory

In the 1970s, Kolb (1970) introduced the influential Experiential Learning Theory (ELT), which suggests that learning is a process of integrating new experiences with existing knowledge. This theory aligns with constructivist views, emphasizing that personal knowledge of the learner plays a crucial role in the creation and recreation of social knowledge (Kolb & Kolb, 2005, p. 194).

ELT proposes a learning process that involves a cycle of experience, reflection, conceptualization, and action. This cycle, known as Kolb's (1970) Learning Cycle, includes four stages: concrete experience, reflective observation, abstract conceptualization, and active experimentation. The theory posits that learners acquire skills and knowledge through personal experiences and reflections on these experiences.

In recent times, the FC model has emerged as a notable teaching method. The FC model overturns the conventional structure by reversing the sequence of educational tasks. Within the FC framework, students initially engage with new materials via virtual resources followed by interactive classroom sessions. This approach is designed to foster active learning, giving students the autonomy to learn at their preferred pace and schedule.

The FC model is increasingly recognized as an effective implementation of ELT. It aligns with the experiential learning cycle of ELT by enabling students to independently explore and reflect on content through online materials.

3. Method

3.1. Research Design

This study investigated the impact of the FC model on the self-efficacy of sixth grades in an English Grammar course at private English Language institute in Iran. Employing a quasi-experimental design, it compared two classes designated as experimental and control groups. The experimental group received pre-class videos and materials as part of the FC model, aiming to

maximize in-class collaboration, while the control group followed face-to-face approach. Self-efficacy was measured through pre- and post-tests, along with an English grammar literacy assessment post-intervention.

3.2. Participants

The participants of this study comprised male sixth graders, ranging in age from 12 to 13, who were enrolled in English Grammar at three English Language Institutions in Iran. The 100 sixth grades, out of a total of 120, were chosen for the elementary proficiency level on the basis of their Oxford Quick Placement Test (OQPT) results. Prior to commencing the course, every student completed successfully the OQPT. Their scores, which varied from 0 to 20, corresponded to the A1 elementary level in accordance with the guidelines for interpreting the Oxford test results. Convenience sampling was utilized in the research to ascertain the participants.

3.2. Materials and Instruments

3.2.1. Oxford Placement Test (OPT)

The researcher employed the OPT as an initial assessment tool to determine the students' overall language proficiency in this study. It was essential to affirm the uniformity of the participants' abilities through this evaluation. The candidates' English proficiency is classified into four categories by the test's scoring system: elementary (with scores spanning from 0 to 20). The validity of this widely utilized assessment is acknowledged, and its dependability has been validated by numerous research investigations.

3.3.2. Book Grammar Friends 1

Grammar Friends 1, which was used in the study, was published by Oxford University Press in 2013. This textbook has fifteen lessons that are specifically designed with writing and grammar in mind for sixth-grade elementary students. The instructor did 16 sessions, held twice a week, covering 7 of these classes to pursue this research within the allocated time.

3.3.3. Self-Efficacy Questionnaire

To evaluate the effect of the FC model on the self-efficacy of sixth graders, the researchers employed a modified version of the "*self-efficacy questionnaire*" originally developed by Pintrich and DeGroot (1990).
The adaptation entailed the conversion of Pintrich and DeGroot's *Motivated Strategies for Learning Questionnaire (MSLQ)* into an eight-item Likert scale that was explicitly customized for the assessment of self-efficacy among primary school students. The scores obtained from this assessment are used to gauge the academic self-efficacy of the students.

The questionnaire is composed of two distinct parts: *motivational beliefs*, comprising 25 items, and *self-regulated learning strategies*, consisting of 22 items, culminating in a total of 47 items for the entire scale.

3.3.4. Power Points and Work Sheets

The treatment group received, reviewed, and was supplied with PowerPoints and worksheets pertinent to their lessons. As part of their homework, students were assigned to develop PowerPoint presentations for specific sentences or phrases from their textbook, which they then shared with their peers in the group. Additionally, they were given the option to enhance these PowerPoints by incorporating their own voice recordings.

3.3.5. Online Management System

The Shad platform application served as a digital hub for disseminating educational content, collecting student projects, offering real-time feedback, overseeing peer support and academic literacy activities, and communicating forthcoming classroom schedules to students (Nabilou & Zarei. 2023).

3.4. Data Collection Procedure

Participants in this study were chosen from a group of sixth-grade kids in Iran, who were enrolled in English Grammar course. Based on their OQPT results, which ranged from 0 to 20, which represents an elementary level, 100 students were selected from a total of 120. During the winter semester of 2022, all the participants were male sixth graders with comparable socioeconomic, geographic, and educational backgrounds.

Following a process of homogenization and exclusion of a segment of the initial cohort, the remaining students were divided into two intact groups, with 50 students each in the experimental and control groups. An English Grammar literacy test was administered to both groups as a pre-test before the experimental phase began. During the experiment, the experimental group engaged with the flipped classroom model, receiving electronic materials (videos, podcasts, voice tracks) through the Shad platform application. These students were expected to review the material, including video lectures covering key grammar points from "*Grammar Friends 1*," at home before class. In-class activities then built upon this pre-learning, incorporating discussions, workbook activities, cooperative problem-solving exercises, and practical application sessions.

Conversely, the control group, following a traditional educational model, received the same videos and electronic materials during class time, with the teacher delivering content and students completing assignments at home. The only thing that separated the two groups' lessons' content and

length was how they were taught. Both groups took an English grammar post-test at the end of the trial to gauge how well the intervention had worked.

4. Results and Discussion

4.1. Results

To address the study inquiry, an initial analysis was performed on the mean scores of both the control and experimental groups in the pretest and posttest to determine the homogeneity between them. Subsequently, a comparative assessment of the posttest outcomes was undertaken to determine any significant disparities in the results of these two groups following the implementation of the FC approach.

Table ١ demonstrates that the initial mean scores for self-efficacy in both control and experimental groups are closely aligned, reflecting similar performance in the self-efficacy pretest. The posttest means scores indicate a higher achievement for the flipped classroom group, with the control group scoring an average of 2.84 and the experimental group 3.84. Furthermore, a notable improvement is observed in the experimental group, evidenced by an increase from a pretest mean of 2.7200 to a posttest mean of 3.84, implying enhanced self-efficacy.

Table1

Descriptive Statistics of Self-Efficacy Pretest and Posttest

Tests	Groups	Mean	Standard deviation
Pretest	Control	2.6200	.66670
	Experimental	2.7200	.75701
Posttest	Control	2.8400	.76559
	Experimental	3.8400	.86567

This result suggests that the flipped classroom model restructures the traditional educational approach by presenting content prior to classroom sessions. This adjustment liberates class time for more interactive activities, such as exercises, discussions, and hands-on learning opportunities. Such a transformative shift can profoundly affect students' confidence and their self-assessed competence in mastering the curriculum. This is primarily because the model facilitates deeper interaction with the educational material, tailors learning experiences to individual needs, and amplifies the chances for students to receive clarifications and feedback during classroom interactions. The observed differences in mean scores between the experimental and control groups can likely be traced back to the dynamic learning environment the flipped classroom model cultivates. This model compels students to engage with learning materials before class, setting the stage for collaborative problem-solving and discussions during class time. These interactions not only bolster material comprehension and retention but also foster a sense of

community and support among learners. Furthermore, the emphasis on self-guided learning outside of classroom confines is instrumental in nurturing learners' self-efficacy, as they create confidence in their capacity to independently navigate through educational content.

4.2. Discussion

The research question of this study focused on identifying any differences in the self-efficacy levels concerning English grammar among sixth-grade students. This investigation compared the efficacy between two groups: those instructed via the FC approach and those taught through conventional teaching approach.

The research question *Does flipped instruction significantly affect the self-efficacy of sixth-grade elementary students compared to those taught through traditional methods, as observed between the experimental and control groups?* is addressed using data presented in the results section. The collected data was analyzed by comparing means of two groups.

Referring to Table 1, the mean score for the experimental group (utilizing the flipped learning classroom) was 3.84, compared to 2.84 for the control group (taught through traditional methods). While the experimental group exhibited a marginally higher mean, a comparative analysis was necessary to understand the significance of this disparity.

This study's findings are consistent with those of investigations by Ling-Yi (2017), Zeynaddin and Halili (2016), Winginton (2013), Lan Chu et al. (2019). To elucidate the result, it is important to note that in the flipped learning classroom model, teachers furnish students with the instructional content for an upcoming session in advance. This requires students to engage with the provided material—whether through videos, text files, audio recordings, or other mediums—independently, to grasp the upcoming class topic. Subsequently, they participate in the classroom session, having pre-acquired the foundational knowledge.

The classroom serves as a forum for knowledge-based discussion. It is where problem-solving, question-and-answer sessions, and exercise-solving occur. In the flipped classroom model, activities traditionally done at home, such as reviewing and learning content, are shifted to the class. This method progressively enables students, fostering an awareness that they can comprehend the course material prior to its exploration by the instructor.

Consequently, they enhance and expand their ability to study independently, which in turn increases their self-efficacy. Under the flipped classroom model, learning occurs in two locations: in the classroom, students work in groups to complete tasks while watching instructional videos related to the subject (Bishop & Verleger, 2013).

Students can effectively finish their work in class with the assistance of their teacher and peers. Peer models (Schunk, 2003; in Margolis & McCabe, 2006) and the preparation of moderately demanding collaborative assignments are two well-researched ways for enhancing students' self-efficacy.

Regarding the FC model, it establishes an environment conducive to student interaction and group collaboration. This setup allows group tasks within peer groups to act as exemplars for both mastery and coping mechanisms. The mastery model serves to elucidate specific skills or learning strategies, including the optimal timing for their application.

The flipped classroom model creates an environment conducive to student interaction and group collaboration. This arrangement allows for group tasks within peer groups to serve as examples for mechanisms of mastery and coping. The mastery model aids in elucidating learning skills or strategies, including the optimal timing for their application.

5. Conclusion and Implications

The main purpose of this study was to examine the effect of the FC model on the self-efficacy of sixth graders. Additionally, the study sought to determine if there was a notable distinction and difference in the effectiveness of the FLC approach in enhancing the self-efficacy of sixth graders in Iran.

Th results indicated better posttest performance and improved grammar literacy and perceptions of FLC in students. This approach, addressing the motivational and self-belief challenges in Iranian elementary education, shows that student involvement is key to learning success.

The research indicates that the FC method significantly improves learning beyond traditional classroom settings and increases student interaction via active learning techniques. This approach was particularly effective for elementary school English as a Foreign Language (EFL) students in Iran, resulting in improved grammar skills and more optimized classroom engagement. The flipped methodology facilitated enhanced grammar practice, enabling students to progress at their individual pace while allowing teachers to provide personalized support. This approach was favorably received by sixth-grade students and demonstrated educational advantages in the context of second language instruction.

The study underscores the importance of incorporating environmental education materials and content. It advocates for the establishment of a supportive learning environment, the promotion of collaborative learning activities, and the selection of materials that resonate with learners, all aimed at augmenting English grammar skills. Additionally, the study shows that the flipped model is conducive to both individual and collaborative learning, empowering students to work at their preferred speed and engage actively in group tasks. The research calls for further studies to conduct long-term

comparisons between flipped and conventional classroom methodologies, highlighting the potential of the flipped classroom to enrich educational experiences and guide teacher methodologies.

The findings of this study affirmed that FC model have a significant effect on students' attitudes and learning outcomes. This evidence supports the view that FLC fosters a more constructive and beneficial educational process. Instructors with prior experience and knowledge in implementing the Flipped Classroom (FC) approach in elementary EFL classrooms are likely to be more proficient and effective in both communication and teaching. These conclusions hold significant implications for various stakeholders in the educational field. Teachers can gain insights into the efficacy of flipped learning methodologies, encouraging them to adopt such strategies in their pedagogy. Students stand to benefit from an enhanced learning environment that fosters engagement and deeper understanding. Administrators are informed about the value of supporting and integrating flipped classroom models into the educational framework. Lastly, curriculum designers can consider these findings to develop more interactive and effective learning materials that align with the flipped classroom approach.

Elementary English educators can enhance the quality of their instruction by incorporating flipped classroom elements into certain teaching activities. This includes designing activities that bolster learning using suitable digital content, tools, and platforms. Additionally, offering an extensive array of multimedia resources for downloading or streaming, alongside teaching advice, research papers, books, guides, comprehensive teaching packs, and webinars, can significantly contribute to this improvement.

This research highlights a significant potential shift in grammar instruction, particularly in the context of Iranian language institutes. The study introduces a novel, creative approach that centers on learner engagement, promoting strategies that allow for greater student participation in both the presentation and practice of materials. A notable outcome observed during the study was the increased involvement of students in the classroom when employing the FLC methodology, underscoring the effectiveness of this strategy. Moreover, these findings carry implications for curriculum development. Curriculum designers are advised to incorporate FC elements into the syllabus, emphasizing the need for courses that blend traditional learning with modern, technology-driven methods. This approach necessitates encouraging educators to incorporate technological tools into their teaching plans.

Administrative bodies must recognize the critical application of technology in enhancing EFL instruction. This entails not only equipping classrooms with advanced technological resources but also prioritizing teacher training programs that focus on developing educators' digital competencies.

Such training is essential for teachers to effectively implement flipped classroom strategies and adapt to the evolving demands of modern education. Further, this study's findings are particularly relevant for revitalizing the learning experience of students who have previously been subjected to uninspiring English courses. It suggests a transformation of the educational landscape, catering to the needs and interests of 'digital natives' – the new generation of learners. To remain relevant and engaging, textbook authors and compilers should consider creating interactive and technologically integrated content, utilizing applications and other digital tools to enhance the effectiveness and appeal of their educational materials.

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