OPEN PRAXIS

Transformative Learning: Flipped Classroom and Its Impact on Writing Skill and Critical Thinking Level

RESEARCH ARTICLE

MUHAMMET FURKAN ALPAT
EMRAH GÖRGÜLÜ
*Author affiliations can be found in the back matter of this article

INTERNATIONAL COUNCIL FOR OPEN AND DISTANCE EDUCATION

ABSTRACT

The study sought to ascertain if critical thinking instruction delivered via the Flipped Classroom may improve students' EFL writing skills. In addition to determining if the present instructional model influences students' views of critical thinking and attitudes toward Flipped Learning integration, another goal is to determine whether students' attitudes about Flipped Learning integration change. Students at the School of Languages at the upper-intermediate level took part in a reading and writing course to enhance their writing abilities. It was an experimental study with two groups consisting of an experimental group and a control group that each got training from the researcher for six weeks, and each group included 15 students. A variety of qualitative and quantitative data collection tools were used for this study, with the California critical thinking level inventory survey used in the first phase of the study, and critical thinking interviews used in the latter stage of the flipping classroom survey. Analyzing students' responses to the California Critical Thinking Level Inventory found that the experimental group outperformed the control group, indicating a substantial boost in critical thinking abilities in those who took part in the experiment. The findings of the Flipped Classroom questionnaire show that students have a significant influence on the new teaching model in terms of their opinions regarding it.

CORRESPONDING AUTHOR:
Muhammet Furkan Alpat
Ibn Haldun University, Türkiye
emrah.gorgulu@izu.edu.tr

KEYWORDS:
blended learning; flipped classroom; critical thinking; teachability of critical thinking; writing skill; tpack; instructional model; flexible learning; flipped writing course; flipped learning

TO CITE THIS ARTICLE:
Alpat, M. F., & Görgülü, E. (2024). Transformative Learning: Flipped Classroom and Its Impact on Writing Skill and Critical Thinking Level. *Open Praxis*, *16*(3), pp. 396–409. https://doi.org/10.55982/openpraxis.16.3.704

INTRODUCTION

In contemporary society, critical thinking skills are highly valued, and educational programs are formulated to foster these skills in students (Domu et al., 2023). This is because possessing critical thinking skills equips students to acquire new knowledge and challenge their beliefs (Anderson & Rivera Vargas, 2020). Critical thinking entails thinking at a high level (Gündoğdu, 2009), mastery of one's thought system (Paul et al., 1997), and logical and rational thinking (Facione et al., 2000). Critical thinking is a learnable skill that can be taught in conjunction with other thinking skills (Liu, 2023). Educators must possess the necessary competencies to teach critical thinking to students, and teaching critical thinking enables students to perceive themselves and their surroundings more effectively (Bozkurt et.al., 2023).

To develop critical thinking skills, enriched educational environments and activities that do not restrict learners' skill and ability development should be created (Sharma et al., 2023). Since 2005, educational programs in Turkey have been founded on the constructivist philosophy, which considers critical thinking skills a fundamental skill. As a result, there has been a significant increase in studies on critical thinking skills. Typically, studies on teaching critical thinking combine it with communicative skills like writing. Writing is a critical skill in language teaching, as it is one of the productive skills in language learning, and should be emphasized in language classes (Matsuda & De Pew, 2002; Silva & Brice, 2004). Students must improve their writing skills to express their thoughts and feelings in written form and learn how to write the language correctly.

Additionally, negative attitudes towards writing are closely associated with writing classes in EFL (English as a Foreign Language) education, leading to demotivated learners. To address this issue, EFL writing teachers should integrate technology into the classroom. Digital natives, who have grown up with digital technology, have almost limitless access to technological devices such as smartphones, laptops, and tablet PCs. Integrating these devices into learning settings can potentially yield better results in terms of language learning and production, and help develop more positive attitudes towards writing.

Teachers are expected to possess critical thinking skills as they play a pivotal role in fostering critical thinking among their students (Ten Dam & Volman, 2004; Kaye & Ragusa, 1998; Williams, 2005). Therefore, teaching critical thinking should be accorded high priority in language education. To this end, various instructional strategies have been examined. With the advent of technological innovations, the integration of critical thinking skills in teaching has become more seamless. The Flipped Classroom, a pedagogical approach that involves delivering instructional content, often online, outside of the classroom, and transferring activities traditionally accepted as homework into the classroom, has emerged as an effective instructional strategy to inspire critical thinking skills in the classroom (Cho et al., 2021). While many studies have examined the effectiveness of the Flipped Classroom approach in L1 settings, limited research has focused on its potential to develop critical thinking skills among L2 learners. Thus, this study aims to address this research gap by investigating the impact of Flipped Classroom instruction on the critical thinking and L2 writing performance of Turkish EFL learners and their perception of critical thinking and Flipped Classroom integration.

LITERATURE

The evolution of blended learning over time signifies that educational instruction will undergo further innovations (Bozkurt, 2022). Graham's (2006) research is concerned with four communication metrics in face-to-face and distributed settings. Distributed environments have begun to outperform traditional face-to-face learning environments in terms of time and convenience. Advancements in technology have enabled distributed environments to provide synchronous instruction. The convergence of conventional face-to-face and distributed learning environments has gained increasing traction and is likely to persist in the future.

The historical development of blended learning underscores its growing popularity as a pedagogical strategy that is poised to continuously transform the landscape of educational instruction (Domu et al., 2023). Constructivism, a prominent theoretical framework of learning, posits that individuals build new knowledge by actively engaging with and connecting pre-

existing ideas and experiences (Ali et al., 2019). In this vein, blended learning has been shown to support both cognitive and social constructivism, thereby enhancing student engagement and achievement, while providing a flexible and accessible learning environment (Campillo-Ferrer & Miralles-Martínez, 2021).

The investigation of blended learning's effectiveness in enhancing writing skills is an expanding but restricted field. It was demonstrated that blended learning was 25% more convenient and flexible than traditional teaching in a writing composition course by Wadoups, Hatch, and Butterworth (2003), comparing traditional and blended learning environments. Ferriman (2013) tested the effectiveness of blended learning on undergraduate academic essay writing by involving 30 students. However, no statistically significant differences were observed when using an online bulletin board in combination with face-to-face communication for references used, word count, and essay score. However, the study was appropriate for larger classes. According to Arani (2012), internet tools and blogs which assist with language learning can greatly enhance writing skills. Using a survey of intermediate-level EFL students, Bahce and Taslac's (2009) were able to examine the perceptions of students regarding blended writing courses, and they found that these courses offered meaningful writing opportunities, as well as promoted positive attitudes towards the writing process. An English writing class incorporating Facebook and peer assessment achieved positive results, according to Shih (2011).

The available literature regarding blended learning's effectiveness in enhancing students' writing skills is still limited, yet steadily expanding. Notably, Waddoups, Hatch, and Butterwoth (2003) conducted a comparison between traditional and blended learning environments in a writing composition course, and the findings indicated that blended learning yielded a 25% decrease in instructor time while providing more flexibility and convenience than traditional methods. Similarly, Ferriman (2013) conducted an experimental study on thirty students to examine the effects of blended learning on academic essay writing, concluding that the use of an online bulletin board in addition to face-to-face communication did not bear a significant statistical impact on essay scores, word count, or the number of references used. Nevertheless, it was deemed suitable for larger class sizes. Meanwhile, Arani (2012) suggests that internet tools and blog-assisted language learning exercises have immense potential for augmenting writing skills. Bahce and Taslacı (2009) analyzed intermediate-level EFL students' perspectives on blended writing classes and reported that they provide meaningful writing opportunities and promote positive viewpoints regarding writing. Lastly, Shih (2011) conducted research on the integration of Facebook and peer assessment in a college English writing class, ultimately uncovering positive outcomes. In summary, blended learning provides authentic learning experiences, flexibility, and convenience (Ng. et. al., 2013). Studies have demonstrated that blended learning has the potential to enhance writing skills.

Flipped learning is a contemporary educational strategy that redefines the traditional roles of instructors and learners, both inside and outside the classroom, to optimize the utilization of in-class time (Anderson, 2012). Under this pedagogical approach, students are expected to independently and at their own pace view pre-recorded lectures or review notes provided by the instructor, who assumes a facilitator or director role. Students engage in collaborative or individualized dynamic learning activities, with the primary responsibility of the teacher being to guide and offer feedback on students' progress (Bergman & Sams, 2012). The conventional in-class presentation or lecture becomes an assignment that is accomplished before the class, hence the name Flipped Learning. This model effectively transforms traditional homework into classwork, providing students with immediate feedback and clarification while they apply newly acquired knowledge (Anderson, 2012).

The origins of flipped learning can be traced back to 2007 when chemistry teachers, Jonathon Bergmann and Aaron Sams, pioneered the use of screen-casting to compensate for missed lessons by students (Bergmann & Sams, 2012). They discovered that in the flipped setting, teachers were able to cover more material, student exam scores were the same or higher, and students quickly adapted to the new setting with a positive attitude.

Critical thinking is a cognitive process that traces its roots back to the ancient philosopher Socrates, who famously sought to uncover the truth through questioning. Over the centuries, this concept has evolved with the contributions of esteemed scholars such as Plato, Aristotle,

and John Dewey, who defined it as reflective thinking. At its core, critical thinking involves a systematic approach to thought, a willingness to challenge assumptions, empathy, open-mindedness, and the courage to evaluate facts with intellectual integrity. It necessitates the use of intellectual standards to bring structure to thinking, awareness of the components of rational thought, and continuous review and evaluation of the thinking process.

Given its critical importance across all fields of education, the teaching of critical thinking has garnered much attention. However, successful instruction of this fundamental skill can only be realized when educators possess a deep understanding of the concept. Consequently, measuring different dimensions of critical thinking attitudes on various age groups has been central to assessment strategies. To this end, the California Critical Thinking Dispositions Inventory is the most commonly used measurement tool.

The literature on the teachability of critical thinking is diverse and complex. Edward D'angelo, (1970) and Mehta & Al-Mahrooqi, (2014) both suggest that critical thinking can be taught, with Mehta emphasizing the importance of continuous practice and application. However, Behar-Horenstein & Niu, (2011) and Mulnix, (2012) caution that the effectiveness of teaching methods can vary, and that there is disagreement over what critical thinking actually is. Tilbury et al., (2010) and Crenshaw et al., (2011) provide specific strategies for teaching critical thinking in social work and post-secondary education, respectively. Lyle, (1958) and Case & Wright, (1997) highlight the need for further research and the challenges of implementing critical thinking in the classroom.

In conclusion, critical thinking is a vital skill that demands a systematic approach, intellectual standards, and critical evaluation of thought processes. Although teaching critical thinking remains a daunting challenge, it is an indispensable aspect of modern education. A variety of measurement tools can assess critical thinking attitudes on different age groups, and recent research supports the effectiveness of supported web environments in promoting critical thinking.

METHODOLOGY

RESEARCH MODEL

This study adopted a pretest-posttest quasi-experimental mixed methods design. In this research, both quantitative and qualitative data were collected and analyzed to explore various dimensions of the research topic. The California Critical Thinking Disposition Inventory (Facione et al., 2000), adapted to Turkish by Kökdemir (2003), PTs' argumentative essays, and the closed-ended items of the Flipped Classroom Opinion Survey developed by Ekmekci (2017) were employed as sources of quantitative data. The qualitative data were gathered through semi-structured interview questions. The research questions are listed below;

1- Is there a major change concerning the Turkish EFL learners who take traditional instruction and those who receive critical thinking instruction which is supported with Flipped Classroom about their critical thinking levels?

2- Is there a significant difference between the Turkish EFL learners who receive traditional instruction and those who receive Flipped Classroom-supported critical thinking instruction regarding L2 writing performance levels?

3- Will there be an alteration in the EFL students' perception of critical thinking at the end of the study?

4- What do the EFL students think about the instruction which is supported with the Flipped Classroom?

DATA COLLECTION TOOLS

The California Critical Thinking Disposition Scale comprises of six sub-dimensions and 51 items that are rated on a 6-point Likert scale ranging from 1 to 6. The rating scale ranges from "totally disagree" to "totally agree." Each sub-dimension of the scale is scored between 10–29 for low, 30–39 for moderate, 40–49 for high, and 50–60 for excellent scores. Overall, scores between 70–209 are considered low, 210–279 medium, and 280–420 higher (Facione et al., 2000). The

Turkish version of the CCTDI-T, translated by Kökdemir (2003), includes categories such as Truth-Seeking, Open-Mindedness, Analyticity, Systematicity, Self-Confidence, and Inquisitiveness.

After the study, the experimental group participants were given the Flipped Writing Class Attitude Questionnaire, which employed a 5-point Likert-type response format, to gather their views on the effectiveness of Flipped Learning in supporting critical thinking instruction. The questionnaire is composed of 25 items and the response options range from 1 (strongly disagree) to 5 (strongly agree).

To gather qualitative data, focus group interviews were conducted at the start and end of the study. The experimental group participants were asked to provide their descriptions of critical thinking, expound on the traits of a critical thinker, and share their opinions on the teachability of critical thinking. During the post-focus group discussions, participants were provided with information regarding their perceptions of flipped learning-supported instruction before and after the interviews.

At the end of the term, both the experimental and control groups were tasked to produce an argumentative essay on the topic of capital punishment as part of the course requirements. The aim was to investigate whether there existed a noticeable distinction between the writing performance of participants who received conventional learning and those who received critical thinking instruction with the assistance of flipped learning. Dişli's (2012) argumentative paragraph rubric was employed for evaluation purposes.

STUDY GROUP

The present study was carried out in an English language preparatory program consisting of six upper-intermediate level groups. Random selection was used to choose two classes for the study, resulting in a sample of 30 participants whose ages ranged from 17 to 19 years old. Of these participants, 16 were native speakers of Turkish and none had prior experience studying in English-speaking countries. In terms of educational background, 20 participants graduated from Anatolian high schools (83.0%), 5 from regular high schools (4.8%), and 5 from religious vocational high schools (4.8%). The participants had been studying English for six months, beginning at the Elementary level according to the Common European Framework of Reference (CEFR). The Reading and Writing Course was offered to both the experimental group (N = 15: Female = 7; Male = 8) and the control group (N = 15: Female = 9; Male = 6), with instruction provided by the researcher.

DATA ANALYSIS

In the pursuit of comprehensively addressing the research questions at hand, not only quantitative but also qualitative methods were judiciously employed to collect data utilizing the instruments previously mentioned. This approach is referred to as a mixed study design and has been acknowledged by scholars such as Lynch (1996) to be highly effective in ensuring that data are rigorously validated through triangulation of diverse instruments, thereby resulting in a nuanced and well-rounded understanding of the research problems under consideration.

To this end, the quantitative data obtained from the writing scores and the Flipped Writing Class Attitude Questionnaire were analyzed utilizing the widely accepted SPSS 20 (Statistics Package for Social Sciences) data analysis tool, which enabled the generation of insightful findings that shed light on the efficacy of the Flipped Classroom method for teaching writing.

In addition to the utilization of quantitative methods, the present study also adopted qualitative techniques such as categorization, coding, and interpretation to amass data through the designated instruments. The amalgamation of these methods, as postulated by Lynch (1996), is referred to as a mixed research design, and affirms that triangulating various data sources is instrumental in attaining a thorough understanding of research problems. The semi-structured interview served as a medium for collecting qualitative data and was duly recorded and transcribed by the researchers. Subsequently, the data gathered from the interviewees' responses were meticulously categorized by the researchers based on their content.

DOI: 10.55982/
openpraxis.16.3.704

RESEARCH PROCEDURES

The study employed a text-only instructional method in the lectures delivered to the control group. The pedagogical goal was to foster critical thinking and effective communication skills, specifically in the realm of argumentative essay writing. To achieve this objective, the topic of capital punishment was selected, and a corresponding syllabus was designed with the inclusion of pertinent articles. These articles were carefully chosen to stimulate multi-dimensional thinking and to encourage students to articulate their views persuasively. Specifically, the articles explored the diverse attitudes towards capital punishment held by distinct groups, including but not limited to victims' families, human rights activists, wrongfully convicted individuals' families, and religious functionaries.

The lesson in question pertained to reading and writing for an upper-intermediate group and spanned a period of six weeks. The reading lessons were deliberately centered around the contentious topic of capital punishment, with the aim of fostering critical thinking skills in students. The writing component of the lessons focused specifically on teaching argumentative essay writing. The use of the capital punishment topic was a strategic choice to provoke critical thinking and to facilitate meaningful learning outcomes in the experimental group. Further details regarding the construction process of the Flipped Learning-Supported critical thinking instruction will be explicated in the subsequent section.

In the context of implementing a flipped learning approach, which involves the use of technology to extend learning beyond the classroom setting, a platform that facilitates communication between students and teachers is imperative. For this study, Google Classroom was deemed an appropriate tool for achieving this purpose, allowing for the uploading of instructional videos, assignment submissions, and feedback delivery. The experimental group was first given an overview of the flipped learning approach and was then introduced to Google Classroom, whereby they were instructed to register using a unique code. All participants utilized their university-issued email addresses, passwords, and group codes to access the platform, where the researcher had uploaded the relevant writing and reading lesson videos for easy accessibility by the experimental group.

The experimental group underwent a six-week period of instruction utilizing the Flipped Learning-Supported Critical Thinking methodology, whereas the control group received a text-only educational approach. Despite this variance, both groups were required to compose an argumentative essay on the topic of capital punishment, with a focus on the writing process. Students were instructed to work collaboratively in the classroom setting and independently beyond class time. The syllabus for the six-week instructional period, based on capital punishment, was specifically designed to teach critical thinking skills and to facilitate the development of an effective argumentative essay.

LIMITATIONS

The present study had certain limitations, including a restricted number of participants in both the control and experimental groups, a brief duration, and a lack of a pilot study. The institutional policy mandating smaller class sizes led to a reduced number of participants, which may be perceived as disadvantageous to the study's overall findings. However, this resulted in greater opportunities for students to engage in discourse during lessons and allowed the researcher to provide more personalized attention, ultimately resulting in more effective lessons. The duration of the study was limited due to the modular system employed by the institution, whereby groups were reconstituted based on students' module exit exam results. While the present study centered on writing, the Flipped Classroom methodology could be adapted to enhance the efficacy of all language skills, both receptive and productive. Additionally, Flipped Classroom approaches could be extended to teach critical thinking in other fields such as social sciences and natural sciences. Finally, this study serves as a springboard for further research into language teaching, including the acquisition of skills such as interpreting, analyzing, synthesizing, evaluating, and reflecting on information.

FINDINGS AND DISCUSSIONS

The results of the CCTDI-T scores

The study's outset involved an independent sample t-test to establish equivalence between the experimental and control groups based on their pre-CCTDI-T scores. The results demonstrated no significant differences between the two groups regarding their CCTDI-T overall scores and subscales, including inquisitiveness, analyticity, systematicity, open-mindedness, truth-seeking, and self-confidence. Afterward, a post-test was used to evaluate post-CCTDI-T. Table 1.1 shows the variations in critical thinking dispositon levels between the experimental and control groups.

Table 1.1 Differences between the groups (N = 20) in terms of their overall CCTDI-T scores.

SCALE	GROUP	TEST	M	SD	T-VALUE	DF	P
CCTDI-T	experimental control	pre	221.33	16.15	−2.43	56	.017*
		post	229.00	20.88			
		pre	220.07	21.86			
		Post	222.40	26.61			

The findings of the research indicate that the experimental group outperformed the control group, as there was a noticeable enhancement in their critical thinking disposition when compared to the control group. Additionally, the table presented below illustrates the variances between the CCTDI-T sub-scales after the study, with respect to the groups' critical thinking disposition levels at the conclusion of the investigation.

Findings and Discussion about Flipped Writing Class Attitudes Questionnaire

The experimental group participants were surveyed using a five-factor questionnaire, called the Flipped Writing Class Attitude Questionnaire, to determine their attitudes towards various aspects of flipped learning, including CMS (Course Management System in Google Classroom), video lectures, preparing for exams in a flipped learning environment, and their overall opinions on flipped versus traditional learning. The responses were analyzed using SPSS software through a frequency analysis.

Table 1.2 displays the participants' perceptions of the efficacy of Google Classroom as a Course Management System. The majority of respondents affirmed that Google Classroom was beneficial for their learning process, with 70% strongly agreeing, 20% agreeing, and only 10% being neutral. Additionally, 60% strongly agreed and 30% agreed that CMS is a crucial part of their learning, with a minority of 10% disagreeing, which could be attributed to temporary internet connectivity issues.

Table 1.2 Percentage of students' attitudes towards course management system (CMS).

sa: strongly agree a: agree n: neutral d: disagree sd: strongly disagree.

STATEMENTS	SA	A	N D	SD
24- Course Management System (Google Classroom) is a useful tool for following the course requirements.	70,0	20,0	10,0 –	–
25- CMS (Google Classroom) is an important part in my learning.	60,0	30,0	–	10,0

Table 1.3 shows that 70% of the participants liked watching video lectures, while 20% were neutral. Additionally, 50% of the experimental group regularly watched the video lectures, and 30% were unsure. Moreover, 90% of the participants found video lectures beneficial. Regarding the quality of the videos, 50% of the students reported that the lectures were not boring, while 20% found them tedious. Varying the content of the videos may alleviate boredom.

The table above shows the noteworthy frequency analysis of students' responses to statements related to flipped learning in the research on the effectiveness of using the flipped classroom for learning writing.

STATEMENTS	SA	A	N	D	SD
1-I like watching the video lectures.	40,0	30,0	20,0	10,0	–
2-I regularly watch the video lectures.	30,0	20,0	30,0	20,0	–
6-I am able to follow the lesson through videos even if I miss a lesson in the actual class.	60,0	30,0	10,0	–	–
9- Videos uploaded in Google Classroom by the teacher are very useful.	40,0	50,0	10,0	–	–
10- Videos uploaded in Google Classroom are informative enough to understand the features of the argumentative essay.	40,0	40,0	10,0	10,0	–
15-I can watch the videos anywhere, anytime I want by downloading the videos.	20,0	50,0	20,0	10,0	–
21-Videos are too boring to watch.	10,0	20,0	10,0	40,0	10,0

Table 1.3 Percentage of students' attitudes towards video lectures.

STATEMENTS	SA	A	N	D	SD
3-I feel that Flipped Writing Class has improved my writing skill.	40,0	40,0	20,0	–	–
4-I am more motivated to write argumentative essays in the Flipped Writing Class.	30,0	50,0	10,0	10,0	
5-I believe that Flipped Learning is an effective way of improving writing skill.	40,0	50,0	10,0	–	–
8-Watching the analysis of several sample paragraphs helps me produce more organized paragraphs.	40,0	40,0	20,0	–	–
12-When I watch writing course through videos, I enjoy writing more.	30,0	40,0	20,0	10,0	–
14-Thanks to Flipped Writing Class Model, we have more time to practise writing in class.	40,0	40,0	10,0	10,0	–
16-1 would not recommend the Flipped Writing Class to a friend.	–	–	10,0	30,0	60,0
18-I think that Flipped Learning is a waste of time for improving my writing skill.	–	10,0	10,0	30,0	50,0
19-If were a teacher, I would not prefer a Flipped Writing Class.		–	20,0	30,0	50,0

Table 1.4 Percentage of students' attitudes towards learning writing through flipped classroom.

sa: strongly agree a: agree n: neutral d: disagree sd: strongly disagree.

Table 1.4 illustrates that 80% of the students reported an improvement in their writing skills through the use of flipped learning, while 20% were uncertain. The positive results can be attributed to increased motivation levels among students, as 80% felt more motivated to write argumentative essays in the flipped writing class. Additionally, 70% of students reported enjoying writing more after watching video lectures. Furthermore, 90% of students found flipped learning effective in improving writing skills, while 80% found the video lectures helpful for practicing writing in class. The majority of students did not recommend the flipped writing class, indicating satisfaction with the model. While some negative attitudes were reported, they can be improved through minor modifications to the flipped writing class. Overall, the majority of students held positive attitudes towards the flipped writing classroom.

The results of a frequency analysis, which is presented in a table below, were used to statistically study the participants' attitudes towards both flipped and traditional classes after the research process, given the fundamental importance of their preferences.

STATEMENTS	SA	A	N	D	SD
16-I feel more motivated when I watch the videos rather than listening to the teacher in the class.	20,0	50,0	20,0	10,0	–
17-I would rather watch a traditional teacher-led lesson than a video lecture.	–	10,0	30,0	40,0	20,0
22-Traditional classes are always more enjoyable.	–	10,0	20,0	60,0	10,0
23- Traditional classes are always better than Flipped Classes.	–	–	30,0	40,0	30,0

Table 1.5 Percentage of Students' Attitudes towards Flipped versus Traditional Learning.

sa: strongly agree a: agree n: neutral d: disagree sd: strongly disagree.

According to the data in Table 1.5, a larger proportion of students (70%) were motivated by videos watched outside of class compared to in-class lectures, while 20% had no preference and 10% disagreed with this statement. This suggests that the flipped writing class was favored by most students over the traditional lecture-based class. To determine students' preference for traditional classes, three reverse statements were used. The majority of participants (60%) did not favor traditional teacher-led lessons. Results from the other two statements showed that most students found traditional classes less enjoyable and less preferred compared to flipped classes. Overall, the results indicate that the flipped writing class had a significant impact on students' attitudes towards the new instructional model, as evidenced by the high percentage of students who preferred it.

The Results of the PTs' Argumentative Essay Scores

Prior to conducting the study, an analysis was conducted to determine if there was a disparity in writing proficiency between the experimental and control groups. To accomplish this, a pre-test was administered to both groups during the initial week of the fall semester. The results were analyzed using an independent samples t-test in SPSS 20 software, a commonly used statistical program in the field of social sciences.

Based on the results of the pre-test as shown in Table 1.6, where the significance level is at 0.500 ($p > 0.05$), it can be deduced that there is no significant difference between the experimental and control groups in terms of their writing proficiency. It is important to note that the mean score of the control group is slightly higher than that of the experimental group.

GROUP	N	MEAN	SD	T	P
experimental	15	44,02	6,57	–,680	,500
control	15	45,40	6,61		

Table 1.6 Comparison of the experimental and control groups' pre-test results.

Table 1.7 reveals that the post-test scores of the experimental and control groups were considerably different (70.02–57.30), indicating that the students in the experimental group had better writing proficiency than those in the traditional writing class. This suggests that the flipped writing class model is an effective approach for enhancing writing skills. It's worth mentioning that despite the experimental group's superior performance, the control group's writing proficiency also showed improvement.

GROUP	N	MEAN	SD	T	P
experimental	15	70,02	6,57	7,01	,000
control	15	57,30	8,01		

Table 1.7 Comparison of the experimental and control groups' post-test results.

QUALITATIVE DATA ANALYSES

Focus Group Discussions

In line with prior indications, a series of focus group discussions were carried out, both prior to and subsequent to the investigation, involving a randomly assembled cohort comprising five willing participants who belonged to the experimental group. The primary objective of these sessions was to detect any plausible alterations in the initial perceptions of critical thinking held by the participants, as well as to gauge their responses to the intervention.

a) Definition of Critical Thinking

One of the key findings from the pre-focus group interviews is that PTs face challenges in providing a clear definition of critical thinking. While the definitions they offer lack clarity, they often mention the essential components of critical thinking. These include being receptive to diverse opinions, demonstrating tolerance for different or opposing views, and maintaining impartiality.

Before the study:

- Critical thinking is highly important and should be constructive rather than destructive.
- Being open-minded and respecting others' viewpoints is crucial for critical thinking.

However, upon analyzing the interviews conducted after the focus groups, it became evident that the PTs were able to articulate a more precise understanding of critical thinking. Whereas their interviews before the focus groups only touched upon different aspects of the concept, they were now able to provide a comprehensive explanation of critical thinking.

After the study:

- Critical thinking entails objectively evaluating multiple perspectives and subsequently formulating one's own views.
- We can refer to it as a process of forming opinions by synthesizing two different ideas to arrive at a third while maintaining an open-minded and well-founded approach.

What Are the Features of an Ideal Critical Thinker?

The PTs conducted pre- and post-group interviews to define the characteristics of an ideal critical thinker. Consistent results were found by emphasizing traits such as objectivity, open-mindedness, tolerance, and lack of prejudice. Quotations from interviews showcased the importance of respect, open-mindedness, and considering facts when forming opinions. Post-group interviews focused on additional qualities needed for a first-time critical thinker, including knowledge, curiosity, and skepticism. They highlighted the significance of having adequate background information to defend or reconsider one's own stance and to support or challenge others' claims. Curiosity was deemed crucial for gaining multiple perspectives on a subject, while a curious personality was considered a fundamental condition for critical thinking. Skepticism played a role in both self-questioning and questioning the opinions of others. Critical thinkers were expected to critically assess their own ideas, and questioning existing ideas, both opposing and supportive, was seen as a characteristic of a true critical thinker. Overall, the post interviews emphasized the importance of being well-informed, curious, and willing to question one's own ideas and the ideas of others to cultivate effective critical thinking skills.

b) Is Critical Thinking Teachable?

The opinions of PTs on the teachability of critical thinking did not show significant differences before and after group interviews. While most respondents agreed that critical thinking could be taught, a few expressed opposing views. PTs believed that critical thinking emerges when two conditions are met: encouraging critical thinking characteristics in the environment and providing opportunities to use those characteristics. They emphasized the importance of a tolerant environment where individuals can express their ideas and develop respect for others' views. The timing of teaching critical thinking was considered crucial, with the pre-school and primary school years seen as the most appropriate. However, in the post-group interviews, PTs expressed that critical thinking could also be taught during university years or later in life. Some PTs believed that critical thinking is innate and not teachable, attributing it to hereditary factors. Mental capacity was identified as a determining factor in the level of learnability of critical thinking. Some PTs became more positive about its teachability based on their project experience. The teacher factor was mentioned in post-group interviews, with teachers seen as both obstacles and facilitators to teaching critical thinking. The Flipped Classroom was generally considered a useful learning tool, with benefits including practicality, collaboration, active learning, English proficiency improvement, critical judgment skills, and research skills. However, one participant did not view it as an effective learning tool.

The Relationship between the Flipped Classroom and Critical Thinking

In post-group interviews, all PTs acknowledged that the use of the Flipped Classroom improved their critical thinking. They emphasized that access to multiple resources and different perspectives facilitated more critical thinking. They mentioned that the Flipped Classroom allowed them to review topics from various angles before writing articles, understand different opinions, empathize with different perspectives, become more tolerant, and appreciate diverse stances. PTs highlighted the importance of objectivity in critical thinking and praised the Flipped Classroom as an effective tool for accessing and exploring information from various sources, including external websites.

The Relationship between the Flipped Classroom and L2 Writing Performance

In the post-group interviews, PTs were asked if using the Flipped Classroom improved their L2 (second language) writing performance. All respondents answered positively, highlighting the advantage of accessing course materials, slides, and websites. They mentioned visiting websites listed in Google Classroom and learning how to write discussion articles, as well as reviewing important points specified by the teacher through lesson materials and slides. PTs expressed that the Flipped Classroom significantly contributed to the development of their English writing skills.

CONCLUSION AND SUGGESTIONS

This research is aimed at developing a contemporary teaching approach for writing classes in an EFL setting that can facilitate the process of teaching writing and render it more meaningful for students. Simply integrating technology into education is insufficient; there must be a valid reason for preferring technology to traditional education. Thus, it was postulated that technology could promote critical thinking skills among students. To test this hypothesis, the Flipped Classroom approach was combined with critical thinking education in a reading and writing course.

During the Spring semester of the 2018–2019 academic year, upper-intermediate level students in the School of Languages were enrolled in the reading and writing course. The Flipped Classroom approach was employed as a new methodology, with the objective of increasing students' level of critical thinking. The study was conducted as an experiment, with two groups randomly selected as experimental and control groups, each comprising 15 students. The aim of the course was to teach students the argumentative essay type and present different types of articles to them. The selected topics on the issue of capital punishment were intended to stimulate critical thinking.

Although both experimental and control groups covered the same topics, there were differences in the delivery of instruction. The control group received instruction exclusively in a classroom setting, without the guidance provided by the Flipped Classroom approach through Google Classroom and Google Document. In contrast, the experimental group had already studied the argumentative essay through videos and tasks and had examined it on their own at home. This independent study component allowed students to engage with the material at their own pace, ensuring a deeper understanding of the content. During the study, the control group participants read specific articles on the topic and answered comprehension or discussion questions led by the researcher, while the participants in the experimental group watched the article summary to activate their knowledge, enabling detailed discussion. Through this approach, various discussion activities were conducted to promote critical thinking skills, and students were required to answer not only comprehension questions but also formulate inferences and make decisions.

Both quantitative and qualitative data collection instruments were used in the research, including the California Critical Thinking Level Inventory survey and the Flipped Classroom questionnaire for quantitative data, and interviews for critical thinking and the Flipped Classroom for qualitative data. The analysis of students' responses to the California Critical Thinking Level Inventory survey revealed that the experimental group outperformed the control group, indicating a significant improvement in the critical thinking skills of the experimental group. The findings of the Flipped Classroom questionnaire suggested that the Flipped Classroom approach had a notable impact on students' attitudes towards the new instructional model, with a high percentage of students preferring the flipped class.

As inferred from the preceding part, the utilization of the Flipped Classroom approach to teach critical thinking concurrently with a writing course yielded substantial dividends for both instructors and pupils alike. Firstly, the integration of technology into the curriculum must be strategic and purposeful to address specific pedagogical needs effectively. It is incumbent upon educational institutions to establish a comprehensive policy that integrates technological tools into their curricula, for doing so will enable educators to navigate pedagogical challenges with greater facility. The technological infrastructure within the classroom as well as the electronic devices that pupils utilize outside of it must be optimized to maximize their efficacy. Secondly, it is of paramount importance that the Flipped Classroom paradigm empowers students to become more autonomous learners and enriches their class time with more meaningful activities. This autonomy helps foster a sense of responsibility and ownership over their learning process. It is noteworthy, however, that videos, as a learning tool, do not by themselves obviate the need for traditional pedagogy; rather, technology must be integrated into the curriculum with a clear rationale to enhance the quality of instruction. Thirdly, teachers must be conversant with the use of Course Management Systems such as Moodle, Google Classroom, or Canvas and be equipped with the requisite skills to edit and design video lectures. The implementation of Flipped Classroom should strive to elevate the standard of instruction, as most of the learning transpires outside of class. To this end, the curriculum should incorporate activities aligned with the higher-order thinking skills prescribed in Bloom's Taxonomy, as was exemplified in this study. Lastly, to ensure optimal outcomes, video lessons ought to be pre-recorded, allowing instructors to refine and improve the activities they will use in class. This refinement process is crucial for maintaining high-quality instructional materials that effectively support student learning.

DATA ACCESSIBILITY STATEMENT

The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request.

ETHICS AND CONSENT

All the data gathered and presented in the study were obtained with the consent and approval of the participants involved. A learning agreement form was obtained that outlines the participants' duties and responsibilities concerning the course and the use of any resulting data. The participants consented to make all recorded videos, outputs, and comments related to the course publicly accessible in Google Classroom.

ACKNOWLEDGEMENTS

This study is the summarized version of the MA dissertation titled "The Effect of Flipped Learning-supported Critical Thinking Instruction on the Critical Disposition and L2 Writing Skill".

FUNDING INFORMATION

A grant for this research was not received from any government, commercial, or not for-profit funding agency.

COMPETING INTERESTS

The authors have no competing interests to declare.

AUTHOR CONTRIBUTIONS (CRediT)

Muhammet Furkan Alpat: Writing—original draft preparation, review and editing; Emrah Görgülü: Supervision, review and editing. All authors have read and agreed to the published version of the manuscript.

AUTHOR NOTES

This paper was proofread, edited, and refined with the assistance of OpenAI's GPT-4 (Version as of February 20, 2024), complementing the human editorial process. The human author critically assessed and validated the content to maintain academic rigor. The author also assessed and addressed potential biases inherent in AI-generated content. The final version of the paper is the sole responsibility of the human author (Adopted from: Bozkurt, 2024).

AUTHOR AFFILIATIONS

Muhammet Furkan Alpat orcid.org/0000-0002-4620-5066
Ibn Haldun University, Türkiye

Dr. Emrah Görgülü orcid.org/0000-0003-0879-1049
Istanbul Sabahattin Zaim University, Türkiye

REFERENCES

Ali, S., Payne, B. H., Williams, R., Park, H. W., & **Breazeal, C.** (2019). *Constructionism, Ethics, and Creativity: Developing Primary and Middle School Artificial Intelligence Education*.

Anderson, D. (2012). The Flipped Classroom for EFL.

Anderson, T., & **Rivera Vargas, P.** (2020). A critical look at educational technology from a distance education perspective. *Digital Education Review, 37*, 208–229. https://doi.org/10.1344/der.2020.37.208-229

Arani, J. A. (2012). Teaching English Medical Writing in a Blended Setting. *International Journal of Emerging Technologies in Learning, 7*(4), 34–37. https://doi.org/10.3991/ijet.v7i4.2253

Bahce, A., & **Taslacı, N.** (2009). Learners' Perception of Blended Writing Class: Blog and Face-to Face. *Turkish Online Journal of Distance Education, 10*(4), 188–202.

Behar-Horenstein, L. S., & **Niu, L.** (2011). Teaching Critical Thinking Skills In Higher Education: A Review Of The Literature. *Journal of College Teaching & Learning (TLC)*, *8*(2). https://doi.org/10.19030/tlc.v8i2.3554

Bergman, J., & **Sams, A.** (2012). *Flip Your Classroom: Reach Every Student in Every Class Every Day*. USA: Iste. ASCD.

Bozkurt, A. (2022). A Retro Perspective on Blended/Hybrid Learning: Systematic Review, Mapping and Visualization of the Scholarly Landscape. *Journal of Interactive Media in Education*. https://doi.org/10.5334/jime.751

Bozkurt, A. (2024). GenAI et al.: Cocreation, Authorship, Ownership, Academic Ethics and Integrity in a Time of Generative AI. *Open Praxis*, *16*(1), 1–10. https://doi.org/10.55982/openpraxis.16.1.654

Bozkurt, A., Gjelsvik, T., Adam, T., Asino, T. I., Atenas, J., Bali, M., ... Zawacki-Richter, O. (2023). Openness in Education as a Praxis: From Individual Testimonials to Collective Voices. *Open Praxis*, *15*(2), 76–112. https://doi.org/10.55982/openpraxis.15.2.574

Campillo-Ferrer, J.-M., & **Miralles-Martínez, P.** (2021). Effectiveness of the flipped classroom model on students' self-reported motivation and learning during the COVID-19 pandemic. *Humanities and Social Sciences Communications*, *8*. https://doi.org/10.1057/s41599-021-00860-4

Case, R., & **Wright, I.** (1997). *Taking Seriously the Teaching of Critical Thinking*.

Cho, H. J., Zhao, K., Lee, C. R., Runshe, D. D., & **Krousgrill, C.** (2021). Active learning through flipped classroom in mechanical engineering: Improving students' perception of learning and performance. *International Journal of Stem Education*, *8*. https://doi.org/10.1186/s40594-021-00302-2

Crenshaw, P., Hale, E., & **Harper, S. L.** (2011). Producing Intellectual Labor In The Classroom: The Utilization Of A Critical Thinking Model To Help Students Take Command Of Their Thinking. *Journal of College Teaching & Learning (TLC)*, *8*(7), 13. https://doi.org/10.19030/tlc.v8i7.4848

Disli, O. (2012). *Improving Writing Skills through Supplementary Computer-Assisted Activities* (Doctoral Dissertation). Gazi University, Graduate School of Educational Sciences, Ankara. (Available from the Council of Higher Education, National Dissertation Center, Dissertation ID: 317053).

Domu, I., Pinontoan, K. F., & **Mangelep, N. O.** (2023). Problem-based learning in the online flipped classroom: Its impact on statistical literacy skills. *Journal of Education and E-Learning Research*. https://doi.org/10.20448/jeelr.v10i2.4635

Edward D'angelo. (1970). *The Teaching of Critical Thinking through Literature*.

Ekmekci, E. (2017). The Flipped Writing Classroom in Turkish EFL Context: A Comparative Study on a New Model. *Turkish Online Journal of Distance Education (Tojde)*, *18*(2), 151–167. Retrieved March 16, 2019 from https://doi.org/ 10.17718/tojde.306566

Facione, P. A., Facione, N. C., & **Giancarlo, C. A.** (2000). The Disposition Toward Critical Thinking: Its Character, Measurements, and Relationship to Critical Thinking Skill. *Informal Logic, 20*, 61–84. https://doi.org/10.22329/il.v20i1.2254

Ferriman, N. (2013). The Impact of Blended E-Learning on Undergraduate Academic Essay Writing in English (L2). *Computers & Education, 60*, 243–253. https://doi.org/10.1016/j.compedu.2012.07.008

Graham, C. R. (2006). *Blended Learning Systems Definition, Current Trends, and Future Directions.* In C. J. Bonk, & R. Graham (Eds.) (2006). *The Handbook of Blended Learning: Global Perspectives, Local Designs*. San Francisco: Pfeiffer.

Gündoğdu, H. (2009). Eleştirel Düşünme ve Eleştirel Düşünme Öğretimine Dair Bazı Yanılgılar. *Celal Bayar Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 7*(1), 57–74.

Kaye, C., & **Ragusa, G.** (1998). Boal's Mirror: Reflections for Teacher Education. Retrieved from ERIC database. (ED419787).

Kökdemir, D. (2003). *Belirsizlik Durumunda Karar Verme ve Problem Çözme [Uncertainty in Case Decision Making and Problem Solving]* (Unpublished PhD Dissertation). Ankara University, Institute of Social Sciences, Ankara.

Liu, W. (2023). Critical Thinking Skills For Chinese Teachers: A Study Of Mathematics Teachers' Perceptıons. *Pupil: International Journal of Teaching, Education and Learning*, *7*(2), 01–16. https://doi.org/10.20319/pijtel.2023.72.0116

Lyle, E. (1958). An Exploration in the Teaching of Critical Thinking in General-Psychology. *The Journal of Educational Research*, *52*(4), 129–133. https://doi.org/10.1080/00220671.1958.10882552

Lynch, B. K. (1996). *Language Program Evaluation*, Cambridge: Cambridge University Press. https://doi.org/10.1017/S0272263198301059

Matsuda, P. K., & **DePew, K. E.** (2002). Early second language writing: An introduction. *Journal of Second Language Writing*, *11*(4), 261–268. https://doi.org/10.1016/S1060-3743(02)00087-5

Mehta, S. R., & **Al-Mahrooqi, R.** (2014). Can Thinking be Taught? Linking Critical Thinking and Writing in an EFL Context. *RELC Journal*, *46*(1), 23–36. https://doi.org/10.1177/0033688214555356

Mulnix, J. W. (2012). Thinking Critically about Critical Thinking. *Educational Philosophy and Theory*, 44(5), 464–479. https://doi.org/10.1111/j.1469-5812.2010.00673.x

Ng, K. T., Parahakaran, S., Febro, R. D., Weisheit, E., & **Lee, T. L.** (2013). Promoting sustainable living in the borderless world through blended learning platforms. *Open Praxis, 5*, 275–288. https://doi.org/10.5944/openpraxis.5.4.88

Paul, R. W., Elder, L., & **Bartell, T.** (1997). California Teacher Preparation for Instruction in Critical Thinking: Research Findings and Policy Recommendations. Retrieved from ERIC database. (ED437379).

Sharma, L. R., Bhattarai, R., Humagain, A., Subedi, S. P., Thapa, S., & **Acharya, H.** (2023). Exploring the Underlying Ways of Enhancing Critical Thinking Skills. *International Research Journal of MMC*, 4(4), 83–96. https://doi.org/10.3126/irjmmc.v4i4.61939

Shih, R. C. (2011). Can Web 2.0 Technology Assist College Students in Learning English Writing? Integrating *Facebook* and Peer Assessment with Blended Learning. *Australasian Journal of Educational Technology, 27*(5), 829–845. https://doi.org/10.14742/ajet.934

Silva, T., & **Brice, C.** (2004). Research in Teaching Writing. *Annual Review of Applied Linguistics*, *24*, 70–106. https://doi.org/10.1017/S0267190504000042

Ten Dam, G., & **Volman, M.** (2004). Critical Thinking as a Citizenship Competence: Teaching Strategies. *Learning and Instruction*, *14*(4), 359–379. https://doi.org/10.1016/j.learninstruc.2004.01.005

Tilbury, C., Osmond, J., & **Scott, T.** (2010). *Teaching critical thinking in social work education: A literature review*.

Waddoups, G. L., Hatch, G. L., & **Butterwoth, S.** (2003). Blended Teaching and Learning in a First-Year Composition Course. *The Quarterly Review of Distance Education*, 4(3), 271–278.

Williams, R. L. (2005). Targeting Critical Thinking Within Teacher Education: The Potential Impact on Society. *The Teacher Educator*, *40*(3), 163–187. https://doi.org/10.1080/08878730509555359

TO CITE THIS ARTICLE:
Alpat, M. F., & Görgülü, E. (2024). Transformative Learning: Flipped Classroom and Its Impact on Writing Skill and Critical Thinking Level. *Open Praxis*, *16*(3), pp. 396–409. https://doi.org/10.55982/openpraxis.16.3.704

Submitted: 15 May 2024
Accepted: 10 June 2024
Published: 29 August 2024