



FOSTERING CREATIVE ENGLISH FOR SPECIFIC PURPOSES STUDIES: IMPLEMENTATION OF FLIPPED CLASSROOM METHOD DURING COVID-19 PANDEMIC AT ANTANAS GUSTAITIS' AVIATION INSTITUTE, VILNIUS GEDIMINAS TECHNICAL UNIVERSITY, LITHUANIA

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Abstract. The global impact of the COVID-19 pandemic has had far-reaching consequences, including those within the realm of higher education. The flipped classroom method was adopted as an innovative teaching tool and creative approach within English for specific purposes classes at Vilnius Gediminas Technical University Antanas Gustaitis' Aviation Institute to increase student motivation and enhance the teaching and learning process. The study's results demonstrated that the flipped classroom method yielded both positive and negative outcomes, including more efficient mastery of learning material, improved planning of in-class and out-of-class activities, opportunities for additional research on covered topics, increased workload and time consumption, and other.

Keywords: COVID-19 pandemic, creative approach to English for specific purposes, English for specific purposes, flipped classroom method, higher education, teaching and learning process.

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1. Introduction

The COVID-19 pandemic has significantly impacted various aspects of life worldwide, including education systems. Social distancing measures necessitated redesigning the teaching and learning process towards digital resources as the primary mode of instruction, in line with the principles of the information society (Arora & Srinivasan, 2020; Lim & Kim, 2015). In response, Antanas Gustaitis' Aviation Institute (AGAI) at Vilnius Gediminas Technical University (VGTU) embraced creativity by introducing the flipped classroom method (FCM), a relatively new method to the teaching and learning process, specifically for Aviation English classes. Although the FCM is well-known globally, it has not yet been widely adopted in tertiary-level studies in Lithuania.

This study aims to examine the creative potential of the FCM in enhancing the acquisition of English for specific purposes (ESP) among third-year students enrolled in the Aircraft Piloting program who are studying Aviation English. This research aims to add to the existing scientific discourse on the teaching and acquisition of ESP by non-native speakers.

2. Theoretical background

In the context of higher education, developing competencies that meet the demands of 21st century society is the priority objective of the educational community. The COVID-19 pandemic has caused significant disruptions in the educational sector, forcing institutions to rely solely on information and communications technology to deliver synchronous or asynchronous online instruction (Karalis & Raikou, 2020; Viner et al., 2020). Among the challenges this situation poses is the need to cultivate skills required for the 21st century. The FCM has been proposed to address this need. The FCM is a creative instructional approach where students are introduced to new content, such as lecture material, outside of class through pre-recorded videos or other online resources. During the course, students engage in activities, discussions, and exercises that reinforce and deepen their understanding of the material. The FCM aims to create a more interactive and engaging classroom environment while enabling students to learn at their own pace outside of class (Bergmann & Sams, 2012).

In the context of the FCM, the term *flipping* refers to the exchange of homework and classroom activities, a distinctive feature of this approach. The FCM is part of a broader educational movement that is aimed at cultivating creative, flexible, and efficient learners with various educational approaches and tools, including blended and inquiry-based learning (Ash, 2012; Johnson et al., 2014). One key aspect of the FCM is its emphasis on leveraging online and technology-based tools to facilitate meaningful learning experiences. This approach is designed to encourage learners to take responsibility for their learning, which can lead to improved outcomes (Fulton, 2012). Moreover, implementing the FCM can alleviate teachers from carrying out technology-based classroom activities and empower students to be more actively engaged in the learning process by participating in discussions and problem-solving activities (Bhat et al., 2020). This approach can help students develop critical thinking skills, encourage collaboration and peer-to-peer learning, and improve their ability to apply knowledge to practical situations. As a result, the FCM has gained widespread attention in recent years as a creative and innovative means for teaching and learning in various educational settings.

According to Moravec et al. (2010), the FCM embodies a platform for creative instruction where the teacher uses different technologies to provide flexible learning to students, either independently or in groups. Study materials such as specialty texts, video footage, audio files, and new vocabulary are provided to students before class, allowing them to prepare at their own pace and convenience. In class, the teacher then discusses subjects that students may need to understand better and reinforces learning through active, peer-assisted, and collaborative learning. This approach promotes students' liability of learning, shared understanding, critical thinking, and collaborative skills and shifts their role from passive to active (Miao et al., 2006; G. Akçayır & M. Akçayır, 2018). The FCM enables various didactic modalities, including reflection, discussion, and collaboration among students, teachers, and the learning context (Arnold-Garza, 2014). In contrast to traditional teaching methods that center around the teacher as the primary source of information and the initiator of students' activities, the FCM shifts the focus to student-centered learning, highlighting the creative potential inherent in fostering interactive and participatory learning environments.

3. Methodological background

3.1. Flipped classroom experiment

In the spring semester of 2020–2021, during the COVID-19 pandemic lockdown, VGTU AGAI implemented the FCM. The semester for third-year Aircraft Piloting students runs for 12 weeks or 24 academic hours of online work supervised by teachers. 28 students (aged 20–22) participated in the ESP classes with weekly interactive study materials, including video footage, audio recordings, podcasts, texts, and self-check online quizzes on *Moodle*. The classwork was based on active teaching methods that encouraged creative and critical thinking skills, collaboration, and communication within the framework of the covered material. Students were asked to complete all the allocated assignments before each class. The FCM was adopted in this particular group due to the multicultural background of the students. While the majority of students were Lithuanian, there were also students from India (1), Ukraine (1), Slovenia (1), and the Czech Republic (1). The aim was to facilitate positive learning experiences and exchange among participants from different study cultures. An electronic questionnaire was used twice per semester to measure the respondents' attitudes toward the FCM. The students were expected to reflect on the methodology applied and their progress after the first five weeks of the course and at its end to determine the effectiveness of the FCM in foreign language acquisition.

In social research, various methods and strategies are used to collect data, including questionnaires, interviews, and observation (Aldridge & Levine, 2001, p. 6) to investigate the long-term effect of the FCM and its impact on the study process, an anonymous online survey was selected as the remote research tool to collect feedback. The use of a questionnaire is a common means for collecting quantitative information, analyzing and identifying problems, and comparing results in the social sciences (Kardelis, 2002; McDaniel Jr. & Gates, 2020; McDonald, 2007; Dikčius, 2005, 2011; Pranulis & Dikčius, 2012). The electronic questionnaire method was chosen as the most appropriate data collection means for this study based on its simplicity, ease of use, and ability to reach a maximum number of respondents while ensuring anonymity. The simple structure of the tool makes it easier for the students to understand and respond to the questions: it does not limit the respondents' time, physical location, and reactions. Additionally, this method is expected to provide the most accurate results as the data collected is automatically processed, eliminating the possibility of errors caused by human intervention and providing the opportunity to conduct data analysis using various statistical tools.

The *apklaua.lt* system was selected as the tool for collecting survey data due to its reliability and no expense incurred. The questionnaire link was made available on the Moodle platform, and the respondents' answers were presented in a clear and comprehensible format. This enabled the storage of results in a file that can be accessed using office software applications such as *SPSS*, *Microsoft Excel*, and *OpenOffice Calc*.

The survey questionnaire was designed to collect data in a structured manner, focusing on the study's quantitative and qualitative aspects. The questionnaire consists of 10 questions divided into two main blocks. The first block presents a set of 8 close-ended questions for quantitative data collection. These questions are designed to provide standardized responses that can be easily analyzed using statistical methods, thus helping to avoid subjective data

processing by grouping the answers. The second block contains 2 open-ended questions for qualitative data, allowing respondents to provide more detailed and descriptive answers in their own words. The use of open-ended questions helps to prevent participants from being influenced by the preliminary replies and enables the collection of more detailed information related to the research object. The combination of close-ended and open-ended questions provides a comprehensive approach to data collection that ensures both quantitative and qualitative analysis assuring that the study is well-rounded and that the results provide a deep understanding of the research topic.

Two surveys consisting of identical questions were administered to the participant group. The students were instructed to select the most appropriate response option that accurately described their experiences concerning eight closed-ended questions. These questions encompassed various aspects such as the quality (Figure 1), quantity (Figure 2), and suitability (Figure 5) of the study materials, the time allocated for covering the material (Figure 3), the level of difficulty in preparing for the class (Figure 4), the correlation between the study materials and in-class activities (Figure 6), the efficiency of the study materials (Figure 7), and the level of satisfaction with the teacher's performance during the classes (Figure 8). The findings obtained from the questionnaire are presented below.

The reliability of the data obtained in this study is underpinned by the utilization of a remote research method, which effectively minimized the potential influence of the researcher on respondents during their response process. By employing this approach, participants were allowed to provide answers at their convenience without experiencing any time pressure. This methodological choice aligns with the concerns and suspicions expressed by individuals, as highlighted by Aldridge and Levine (2001, p. 21), regarding the collection and use of personal data. Thus, ensuring the confidentiality of survey data and maintaining the anonymity of respondents becomes particularly crucial in addressing these concerns.

Furthermore, the students of VGTU AGAI have consistently demonstrated a strong motivation to engage in independent learning and professional skill development outside of formal classroom settings. This has been reflected in the overall study outcomes over the years. Consequently, this student motivation serves as an additional criterion for establishing the reliability of the present survey.

4. Survey results and discussion

The study findings indicate that students perceived the study material used for classwork preparation as clear. Most respondents (25 students) affirmed its clarity, while a few acknowledged partial perceptibility (see Figure 1). This suggests effective design and presentation of the material, enabling easy comprehension. The absence of significant obstacles supports its overall explicitness. Clear study material is crucial for learning outcomes, allowing students to grasp the subject matter easily. The consistency of responses across both questionnaires enhances the reliability of the findings, validating the instructional design. The absence of obstacles implies students' ability to navigate and assimilate the material, benefiting their learning experience. These findings emphasize the importance of providing well-structured, accessible study material to enhance students' learning and academic achievements. The students articulated identical viewpoints both in the beginning and the end of the semester.

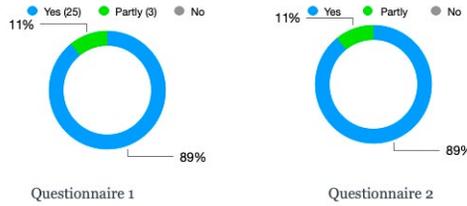


Figure 1. Students’ perceptions regarding the clarity of study material: the middle and end of the course (source: created by authors)

The analysis of Figure 2 demonstrates a positive trend in students’ attitudes toward the quantity of learning material throughout the course. Towards the end of the semester, more students expressed agreement that the amount of study activities was reasonable. This shift suggests students’ growing adaptability and receptiveness to the instructional approach, potentially resulting in improved engagement and a more favorable perception of the study material provided. These findings underscore the importance of gradually introducing study material and offering support to students, emphasizing the demand to consider their evolving needs for a positive learning experience.

The analysis of Figure 3 reveals a significant change in students’ time allocation for classwork preparation throughout the course. Initially, most students intended to spend only one hour studying, but by the end of the semester, approximately half of the group dedicated a minimum of two hours to their preparatory activities. This increased commitment to studying occurred despite the absence of reported difficulties in understanding the study material throughout the course, as indicated in Figure 1. The observed shift in time allocation suggests that students have adopted a more deliberate and purposeful approach to their learning process. It displays a growing awareness among students of the importance of engaging deeply

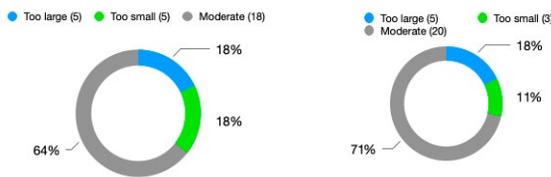


Figure 2. Students’ perceptions regarding the quantity of study material: the middle and end of the course (source: created by authors)

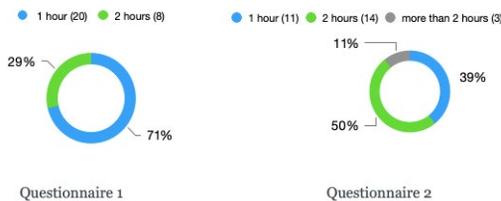


Figure 3. Time allocated to independent preparation for in-class work: the middle and end of the course (source: created by authors)

with the subject matter and investing additional time and effort in their academic pursuits. The behavior change, reflecting students' desire for a comprehensive understanding of the course material, aligns with the idea that students are embracing a more meaningful and intentional learning approach as the course progresses, signifying their recognition of the benefits of dedicating extended periods to independent study. This shift ultimately leads to improved learning outcomes and academic achievements.

The analysis of Figure 4 reveals a substantial change in students' independent preparation for class activities over the course duration. Around half of the students faced challenges in adequately preparing for classes. However, by the end of the semester, this proportion significantly decreased, with only half of the students reporting partial difficulties. This shift can be attributed to the consistent engagement in independent work throughout the course, facilitated by the FCM. The development of personal study skills played a vital role in this transformation. Through progressive involvement in independent study activities, students likely acquired effective strategies and techniques that facilitated their classwork preparation. The decrease in reported difficulties signifies an improvement in students' ability to prepare themselves effectively for in-class activities. This positive outcome highlights the impact of the FCM in cultivating personal study skills and promoting self-directed learning. Encouraging continuous independent work contributed to developing students' competencies and self-efficacy in class preparation.

Both questionnaires (Figure 5) validate the effectiveness of the study material for self-directed learning. The absence of statistically significant differences observed throughout the semester indicates that the study material consistently aided students' independent learning efforts, regardless of time. This finding underscores the uniform benefits of the provided material in facilitating knowledge acquisition and skill development.

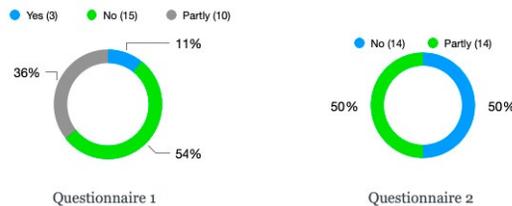


Figure 4. Students' attitude towards independent preparation for in-class activities: the middle and end of the course (source: created by authors)

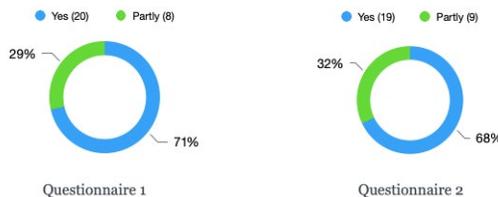


Figure 5. Students' perceptions of study material suitability: the middle and end of the course (source: created by authors)

This study investigated how students’ attitudes toward the study material designated for independent work and its connection to in-class activities evolve over a semester. Figure 6 presents notable findings concerning the attitudes expressed by the participants. Initially, a subset of eight students indicated that the tasks undertaken independently possessed only partial relevance to the classroom activities. However, by the end of the semester, the entire cohort unanimously acknowledged a close correlation between the material for independent studies and the in-class activities. This significant shift in students’ attitudes can be attributed to a corresponding change in the time allocation dedicated to academic pursuits over the semester. Notably, students demonstrated an increased investment of time in preparing for in-class activities, as evidenced by the data presented in Figure 3. The expanded dedication to these preparatory endeavors has influenced the students’ perceptions, leading to a convergence of opinion regarding the interrelation between the study material and the classroom activities. These findings emphasize the dynamic nature of students’ attitudes regarding the connection between independent work material and in-class activities. The observed transformation underscores the impact of varying time commitments on students’ perceptions, suggesting that increased engagement with preparatory tasks fosters a stronger sense of relevance between the study material and the classroom activities.

Five students initially believed that the in-class activities offered no meaningful contribution to their knowledge acquisition concerning independently studied topics. However, over the semester, their perspective underwent a notable transformation. A subsequent end-of-course survey involving the entire cohort revealed a unanimous consensus among students, acknowledging that the in-class activities were relevant to the independently covered material. This collective shift in perception indicates a significant departure from the initial viewpoint expressed by the five students, demonstrating a noteworthy change in their

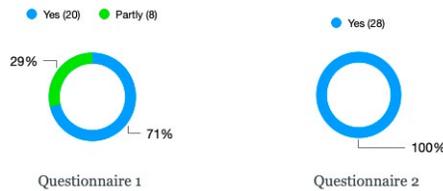


Figure 6. Students’ perceptions of the correlation between independent work material and in-class activities: the middle and end of the course (source: created by authors)

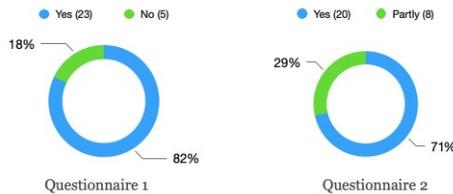


Figure 7. Students’ perceptions of study material efficiency: the middle and end of the course (source: created by authors)

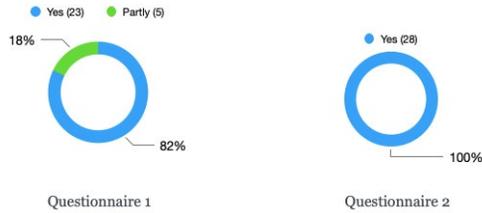


Figure 8. Students' satisfaction with teacher performance: the middle and end of the course (source: created by authors)

perspectives throughout the course. The survey findings, depicted in Figure 7, underscore the altered attitudes of students regarding the effectiveness of in-class activities in enhancing their understanding of independently studied topics. This transformation highlights the potential impact of classroom engagement and interactions on students' perception of the value and relevance of the course materials.

Figure 8 presents the results of a study that examined students' satisfaction with the teacher's performance throughout the course. Notably, all students reported a significant satisfaction increase by the semester's end. They expressed their ability to identify areas of difficulty in their studies, engage in meaningful discussions, and effectively overcome their challenges. This notable improvement in student satisfaction is in stark contrast to the initial stages of the course, which introduced the FCM. During this early phase, students faced difficulty identifying problem areas, lacked effective communication, and experienced difficulties coping with study challenges. However, as the course progressed and students became more acquainted with the FCM, there was a noticeable shift in their ability to address these issues and actively participate in the learning process. The students' increased satisfaction with the teacher's performance indicates a positive impact of the FCM and highlights the teacher's responsiveness and effectiveness in addressing students' needs and facilitating their learning experience. This shift in satisfaction levels emphasizes fostering a supportive and conducive learning environment where students feel empowered to express their concerns and collaborate with their teacher to overcome challenges.

The second block of the questions presented to students focused on eliciting their perspectives regarding the strengths and weaknesses of the FCM. At the commencement of the semester, participants identified the following advantages associated with the FCM:

1. *Students' greater involvement in practicing ESP.* Increased student engagement in ESP practice emerged as a notable advantage of the FCM, as emphasized by 18 participants. The practical aspect of the course was underscored, with respondents highlighting the opportunity to enhance their speaking abilities. One student commented, "The course provided me with the opportunity to improve my speaking skills" (Respondent 2); "I had a chance to speak more often during classes, which, I believe, made me more confident to express my opinion on different topics" (Respondent 9);
2. *Students' greater involvement in discussions on specialty topics.* The FCM facilitated increased student engagement in discussions pertaining to specialized topics. This manifested in a more significant number of discussions, as highlighted by 24 participants:

- “The discussions initiated by the teacher and even by students were truly engaging” (Respondent 10);
3. *Better and easier mastery of the learning material* (pointed out by 12 students). 12 students identified the FCM as facilitating a better and easier mastery of the learning material. According to the participants, this method supported their preparation for assignments, leading to a reduced workload: “There was less studying for the assignments because you [students] prepare before every lecture” (Respondent 1). Generally, students expressed a positive attitude towards the FCM, highlighting its novelty and its perceived usefulness for their future specialization. One student remarked that it offered “A new way of learning (fewer silly tasks)” (Respondent 6), while another appreciated the inclusion of “useful topics” and viewed the methodology as a valuable addition to their current studies (Respondent 8). Moreover, participants emphasized the advantages of a flexible learning pace, with one student noting, “More covered material, reading/watching/listening at your own pace (better both for people who need more time for the tasks and for those who want to do it quicker)” (Respondent 16);
 4. *Better time planning of the class and individual time planning*. 17 students highlighted the benefits of improved time management in both class and personal study, emphasizing the ability to learn at their own pace as facilitated by the FCM. One student remarked, “The time consumption is more efficient since we do not spend extra time reading the provided material, and we can discuss those topics right from the beginning of each lecture” (Respondent 4). Another student expressed their perspective, stating, “From my point of view, it requires more effort as students have to complete individual tasks before the lecture. However, it also makes learning easier since one can maintain focus and consistently progress” (Respondent 7). The opportunity for a personalized learning pace was appreciated, with respondents noting, “Learning at my own pace” (Respondent 1) and “Everyone can work more or less at their speed” (Respondent 5);
 5. *Teambuilding*. Including group work in many tasks within the FCM was perceived as fostering team building, as indicated by 23 students. One student expressed their appreciation, stating, “I think the best moment that occurred during these lectures is that I finally had an opportunity to work and establish contact with some classmates whom I have never interacted with personally” (Respondent 6);
 6. *Challenges*. The FCM presented challenges that encouraged students to think creatively and venture beyond their comfort zones, as noted by 24 participants. One student highlighted the method as a means to overcome self-confidence issues, stating “A way to overcome self-confidence problems” (Respondent 22). Another student described it as an opportunity to step out of one’s comfort zone, saying “Getting out of your comfort zone” (Respondent 14).

However, it is worth noting that one participant (Respondent 12) expressed a need for more perceived benefits associated with the FCM in the context of the studying and learning process. Without further argumentation, this individual stated “Honestly, I can’t see any advantages”.

Several significant milestones of the course can be identified based on the responses provided in the open-ended questions of the end-of-semester survey. These highlighted key aspects and experiences that stood out to the students throughout the course. The participants' reflections provide valuable insights into the effectiveness and impact of the course, as well as areas that may require further attention and improvement. Considering the following, educators and course designers can gain a deeper understanding of the students' perspectives and use this information to enhance future iterations of the course:

1. *More efficient use of class time for learning ESP.* One notable benefit that emerged from the analysis of the open-ended survey responses was the recognition of more efficient utilization of class time for learning ESP, as emphasized by 21 respondents. This reflects the students' perception of the course's effectiveness in providing practical applications of the study material. As one respondent aptly stated "More practical use of material" (Respondent 14). This feedback underscores the value of incorporating meaningful and applicable activities within the classroom setting to enhance the students' language acquisition and proficiency in the specific domain;
2. *More active communication.* Another significant milestone identified through the analysis of the open-ended survey responses was the increased emphasis on active communication, particularly speaking and listening skills, as pointed out by 17 respondents. This highlights the value placed on creating opportunities for students to engage in meaningful oral exchanges. One respondent noted that the course "Provides an outlet for developing argumentative speaking skills" (Respondent 4). Additionally, discussions within the group were perceived to foster a sense of belonging and community, as expressed by one participant who stated "Discussions within the group foster a sense of belonging, community" (Respondent 16). This underscores the importance of interactive and collaborative activities that promote effective communication and cultivate a supportive learning environment;
3. *Possibility to plan one's learning and preparation time for the classes.* An asset that emerged from the analysis of the open-ended survey responses was the recognition of the possibility of planning one's learning and preparation time for the classes, as emphasized by 15 respondents. This signifies the importance of allowing students to manage their study schedules effectively. As one respondent articulated, the course facilitated a "Better preparation for the classwork, a better understanding of the topic" (Respondent 5). Another participant highlighted the advantage of acknowledging and studying new topics before the lecture, which motivated them to seek additional information from various sources and actively contribute to classroom discussions: "Acknowledging/studying new topic before the lecture, that motivates to seek for more information from various sources and tell to the classroom (if the student wants so)" (Respondent 8). This positive aspect highlights the importance of fostering student autonomy and encouraging proactive engagement in academic endeavors, allowing students to assume control of their learning journey;
4. *Possibility to carry out additional research on the covered topic.* Another result of the FCM identified from the open-ended survey responses was the recognition of the possibility of conducting further research on the covered topic, as emphasized by

18 respondents. This reflects the value of engaging in independent exploration and familiarizing oneself with the subject matter prior to the lecture. As one respondent articulated, this approach proves to have merited: “It is more beneficial to do research before the lecture and start to absorb information since it is not new to you when the lecture begins. You get familiar with the topic before the lecture” (Respondent 9). This underscores the importance of encouraging students to actively seek supplementary resources and deepen their understanding of the subject, promoting a more enriched and informed learning experience;

5. *Students’ increased awareness about the upcoming lecture activities.* Another noteworthy point highlighted by the respondents was the increased awareness among students regarding the activities planned for upcoming lectures, as indicated by 23 participants. This signifies the value of providing students a clear understanding of what to expect in future sessions. One respondent expressed that this increased awareness is beneficial: “Knowing what we will do in the upcoming lecture” (Respondent 28). By informing students about the planned activities, teachers can enhance students’ preparedness, engagement, and active participation in the learning process. This accentuates the importance of transparent communication and setting clear expectations to optimize students’ learning experiences.

The survey conducted at the beginning of the semester aimed to gather valuable insights from students regarding any perceived disadvantages or drawbacks of the FCM. This survey allowed students to express their concerns and reservations regarding the approach. Their feedback was crucial in identifying potential areas of improvement and addressing any apprehensions that students may have had. The survey responses yielded a range of concerns voiced by the students, reflecting their initial worries about the FCM. These concerns encompassed various aspects of the learning process, such as instructional delivery, workload management, and potential limitations in the effectiveness of the method:

1. *Time consumption.* 19 participants identified this aspect as an area of apprehension, emphasizing the additional time required to engage with the course material before each lecture. One respondent succinctly conveyed this concern: “It requires extra time before the lecture to read the material” (Respondent 15). The students’ perspectives shed light on the perceived impact of the FCM on their time management and workload. The recognition of time consumption as a potential drawback underscores the need for educators to provide comprehensive guidance and support to assist students in effectively managing their study schedules within the framework of the FCM. By acknowledging this concern, educators can develop strategies to alleviate time-related challenges, such as promoting efficient study techniques, optimizing workload distribution, and providing resources for effective pre-lecture material review;
2. *Increased workload.* 13 respondents highlighted this aspect as a point of contention, remarking on the challenges associated with adjusting to the heightened academic demands: “Kind of hard to get used to it, as the workload has increased” (Respondent 7). The students’ perspectives shed light on the perceived impact of the FCM on their academic responsibilities and the resulting adjustment required. Recognizing an increased workload as a potential drawback emphasizes the importance of providing adequate

support and resources to assist students in effectively managing their tasks within the framework of the FCM. Educators can address this concern by implementing strategies that promote time management skills, prioritization techniques, and workload distribution guidelines. By equipping students with the necessary tools and guidance, educators can help mitigate the potential challenges associated with an increased workload, fostering a more manageable and productive learning experience within the FCM;

3. *Unsuitability/inadequacy of the method for online learning.* The feedback received from 11 respondents shed light on the perceived challenges and limitations associated with this mode of instruction. Specifically, these concerns centered around the unsuitability or inadequacy of the FCM in an online learning environment. One respondent pointed out the difficulty of involving all students in group discussions online, stating "Too many students in the group to involve in discussion with everybody online" (Respondent 2). This highlights the practical challenges of facilitating effective and inclusive group interactions in a virtual setting. Furthermore, some students preferred live lessons, suggesting that they believed these would be more engaging: "I think lessons carried out live would have been more interesting" (Respondent 17). This preference for synchronous instruction reflects a desire for real-time interaction and immediate feedback that may be perceived as lacking in the FCM implemented online. Technical limitations were also raised, highlighting issues such as poor internet connection and sound quality: "Technological limitations, i.e., poor connection, sound quality, etc." (Respondent 21). These technological challenges can hinder online instruction's smooth delivery and reception, potentially impacting the overall learning experience. These challenges articulated by the students underscore the importance of carefully considering the technological infrastructure, pedagogical strategies, and instructional design when implementing the FCM in an online learning context. Addressing these issues related to group discussions, exploring alternatives to enhance engagement, and ensuring reliable technological resources can help optimize the online learning experience within the FCM.

Towards the end of the semester, a follow-up survey was administered to assess the persisting disadvantages of the FCM. The survey findings indicated that time consumption remained a prominent concern among students, as reiterated by 15 respondents. This highlights the continued recognition of the method's impact on students' time commitments. Furthermore, the unsuitability or inadequacy of the FCM for online learning was once again highlighted by a significant number of respondents, with 9 participants expressing this concern. This reiteration of the issue suggests a sustained perception of challenges associated with the online implementation of the FCM. In contrast to the initial positive reception of group work, most students expressed disappointment in this aspect by the end of the semester. The limitations of activity types and the inability of the whole class to actively participate in discussions were identified as significant drawbacks: "Limitation of activity types the whole class cannot get involved in discussions" (Respondent 1). Additionally, the perceived slowness of group work was emphasized, with one respondent noting that "Group work is usually slow-going" (Respondent 25). Another difficulty faced by students was the difficulty studying independently, as highlighted by 8 respondents. Adjusting to self-directed learning

was acknowledged as a challenge: “Not everybody is used to studying by themselves” (Respondent 13). However, the increased workload, previously identified as a significant concern resulting from implementing the FCM, seemed no longer a problem for students by the end of the semester. This suggests a potential adaptation and adjustment to the method’s demands over time. The persistence of specific challenges, such as time consumption and the unsuitability of online learning, indicates the need for further exploration and refinement of the FCM’s implementation. Addressing these concerns, the limitations of group work, and promoting effective self-directed learning strategies can enhance the overall effectiveness and student experience within the FCM framework.

5. Conclusions

The global COVID-19 pandemic has had a far-reaching and all-encompassing influence on diverse aspects of human life, with significant implications for higher education. As a result, educators at VGTU have been confronted with the necessity to explore new and engaging instructional strategies to cultivate students’ creativity, intrinsic motivation, and enthusiasm for learning. In response to this challenge, the FCM has been adopted as an inventive and promising approach to enhance the educational experience and optimize the pedagogical process. Recent empirical investigations have yielded compelling evidence to support the efficacy and benefits of employing the FCM, offering valuable insights into its effectiveness in fostering students’ creativity and curiosity, deepening their engagement, and ultimately facilitating enhanced knowledge acquisition:

1. The successful implementation of the FCM requires an initial adjustment period for educators and students to familiarize themselves with its principles and strategies. Despite this adaptation process, the FCM offers advantages in cultivating students’ creativity and independent learning skills by fostering curiosity, self-directed exploration, and critical thinking. It aligns with contemporary educational theories, developing essential 21st century skills and autonomy. Students gain lifelong learning habits through the FCM and acquire problem-solving and information literacy skills;
2. The FCM presents several advantages within the study process, encompassing the following benefits: enhanced student engagement in practicing ESP and participating in discussions related to specialized subjects; improved and more efficient mastery of the learning materials; enhanced time management skills; fostering of teamwork and collaboration; stimulation of students’ creativity through challenging tasks; promotion of active communication among students; facilitation of additional research opportunities on the topics covered; and heightened awareness and preparedness for future classes;
3. The implementation of the FCM in education has several drawbacks: it requires a significant investment of time; it increases the workload for both students and educators due to the interactive nature of the approach; the FCM may face challenges in adapting to online learning environments; promoting independent study can be difficult for some students. Educators must carefully and creatively navigate these drawbacks and make informed decisions to maximize the benefits of the FCM.

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