Article

Transitioning to Flipped Classrooms: Instructors' Perspectives

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Abstract: With higher education moving more towards online education and wider adoption of more flexible models of teaching, especially during and after COVID-19, faculty members at a small private university in the Kingdom of Saudi Arabia made their first attempts at flipping. Given the lack of studies that examined the transitional period that instructors go through in their initial attempts to flip, this study explored the perceptions of instructors making the transition, where traditional teacher-centered approaches to teaching have prevailed. Their insights can be detrimental to its successful delivery and continued use. To achieve its objective, this research paper investigated the initial perceptions of the requirements of flipping from thirty-seven female faculty members across six different colleges. This study employed a qualitative synthesis of quantitative and qualitative data elicited from interviews, surveys, and self-reflection reports, concluding that instructors transitioning into flipping cannot rely solely on their intuitive beliefs but need extensive training and guidance. The findings will inform instructors and institutions making the transition and will guide educators preparing for flipped classroom training workshops.

Keywords: higher education; flipped classroom; community of inquiry (CoI); social-constructivism; student-centered learning; COVID-19

1. Introduction

The flipped classroom (FC) is a pedagogical approach to blended learning whereby the traditional process of classroom content being normally delivered first, followed by homework, is reversed and is often supplemented by instructional videos [1–3]. Flipped learning is an approach to teaching where direct instruction moves outside of class, and class time is used for active and engaging activities and providing individualized support [4].

During the COVID-19 pandemic and lockdowns and in the post-pandemic era, many instructors who had successfully used the FC approach in face-to-face or blended learning environments before the pandemic continued to use it in online environments [5]. However, there were some who implemented it for the first time during the lockdown but ceased to use it afterwards [6]. The Kingdom of Saudi Arabia responded to the lockdown by instantly shifting to emergency online teaching, and instructors were looking for more engaging approaches to online teaching [7]. There were attempts to train instructors remotely; however, more training on instructional design was needed [8]. Hence, how instructors who incorporated new pedagogies without prior knowledge or sufficient training perceived these active teaching strategies and whether they were implemented successfully need to be determined.

Existing literature points to several external factors that may challenge the successful implementation of the flipped classroom (FC) [9–11]. According to some researchers [11–14], the instructors' pedagogical, design, and assessment skills will determine its successful implementation. Instructors play a prominent role in determining the continued use of the

FC, and the initial outcomes of flipping will impact their decision to continue or cease to flip [14].

Nonetheless, the literature is deficient in research on the instructors' flipping experiences and their perspectives on its implementation, benefits, and barriers [15–17]. Some scholars believe that the FC implementation has been mainly driven by teachers' intuitive beliefs rather than by empirically based principles and thus recommend enriching teachers' knowledge of this pedagogy [18]. In his review of the use of the FC in a range of higher education disciplines and settings, Bernard [19] highlighted the need for future exploration of the experiences or concerns of faculty when making the transition to flipping because few studies have addressed the requirements of this stage [14]. This study attempted to fill this gap in research by investigating higher education instructors' initial perceptions of the FC, particularly when making their first attempts at flipping. More specifically, this study will uncover the instructors' perceptions of the FC underlying requirements and pedagogy. It will explore the faculty's impetus for its use, and their perceptions of its requirements and underlying pedagogy, along with their views on its benefits and challenges. Understanding the instructors' perceptions of this stage and the challenges they face may ensure better outcomes and future continued use.

Unlike the majority of FC research, which focuses mainly on its instructional benefits, this study focuses on faculty perceptions of the FC during the transitional stage, a gap in research that was identified by Bernard [19]. The research will explore the degree of awareness of thirty-seven female faculty members in a Saudi higher education context of the potential of this active-learning approach in cultivating student-centered learning and promoting collaborative interaction that enhances knowledge construction. To the best of the researchers' knowledge, there has been no such attempts at investigating instructors' perceptions of the FC in the Kingdom of Saudi Arabia. This study will offer documentation on this evolutionary stage by uncovering the degree of faculty fulfillment of the major requirements of flipping, which will be tested mainly in terms of Simonson's list or FC prerequisites [14], and Garrison's features or presences of the Community of Inquiry (CoI) framework [20]. The CoI framework is used to examine the teaching and learning practices in online and blended learning environments. It identifies three intersecting core features (presences) that help practitioners design, evaluate, and research online learning environments that adopt a constructivist approach to teaching [21,22]. These three presences (to which more presences were added later) are identified as the social, teaching, and cognitive presences. They represent key activities in the educational context [23], and the interaction between them is what promotes successful online deeper learning. Since the FC is an active learning approach that promotes student-centered learning, findings from this research may serve as an indicator of the instructors' degree of readiness to move away from the traditional teacher-centered classroom to the more student-centered approaches. These methodologies are rooted in the theories of social-constructivism, which is a major objective of the Saudi vision 2030 [24]. It is worth mentioning that teacher-centered approaches are dominant in most educational institutes in the Kingdom of Saudi Arabia, e.g., [25–32]. Hence, the knowledge gained from this research may be used for guiding instructors, making the transition into flipping and assisting educators who are preparing for FC teacher training workshops.

This study will address the following research questions:

(1) What factors do instructors transitioning into flipping believe to be significant requisites for its implementation? What challenges do they face? What recommendations do they make?

(2) How do instructors transitioning into flipping perceive the presences (features) of the Revised Community of Inquiry?

2. Literature Review

2.1. Theoretical Background

2.1.1. Perceptions of the Flipped Classroom

The majority of studies on the flipped classroom (FC) before, during, and after COVID-19 focused mainly on its impact on the learners' achievement, academic performance, motivation, engagement, interaction, satisfaction, and development of higher-order thinking skills [15,33–39], with fewer studies describing the instructors' perceptions of its requirements or its pedagogy. Long et al. [15] affirm that the FC research that focused on the instructor's perceptions and experience in using the FC is still lacking. Even when instructors' perceptions are investigated, they mainly explore the teachers' views on its benefits and challenges [16,40–42].

Some of the FC advantages reported in the literature include increasing students' attainment and engagement and facilitating students' higher-order thinking skills [17]. Zainuddin and Halili's review [38] indicated that the FC enhanced students' achievement, motivation, engagement, and interaction. The FC also improved students' satisfaction, which was evident in their increased study efforts and improved attendance [43]. Other studies revealed that the FC improved students' academic performance and satisfaction [11] and enhanced their learning [44]. It also enhanced the use of more student-centered learning approaches such as active and collaborative learning [9]. Moreover, the FC improved students' motivation [45], provided students with flexibility and convenience, addressed students' issues with internet connectivity and accessibility to technological devices, and provided students with concentrated reinforcement [46].

In their attempt to investigate the instructors' perceptions of the FC, Long et al. [15] listed a number of challenges such as the time and effort it demands, the possible lack of students' preparation before class, students' preference for the traditional approach, and students' reluctance to collaborate. To overcome these challenges, instructors need to get peer support, to be well-organized, to ensure that students come prepared, design learning materials and activities based on students' feedback, and to provide appropriate instant support in class [15]. In another study on instructors' perceptions, Hermanns et al. also identified a number of challenges, namely the time instructors need to spend on developing new interactive activities, the need to move away from traditional course delivery, students' compliance, and having to deal with students' feelings of apprehension [16]. They proposed a number of recommendations such as planning, reflection and development, increasing faculty engagement in innovation, embracing change, and providing faculty with adequate support. Betihavas et al. [9] grouped the flipping challenges into three kinds: students challenges, faculty challenges, and operational challenges. The main challenges faced by students were unfamiliarity with the new approach, unpreparedness for pre-class learning tasks, difficulty communicating with instructors when out-of-class, and difficulty understanding video content. As for the challenges faced by instructors, the most important were the start-up effort, not being accustomed to flipping, and the ineffectiveness of using videos prepared by others. As for the operational challenges, instructors' lacking IT skills and students' lacking IT resources were the main issues reported. Other challenges cited in the literature were the students' resistance to giving up their passive learning habits [43], the poor quality of videos and untrained instructors [38], the need for more interaction with the instructor during asynchronous lectures, and the lack of time during synchronous meetings [46].

Similarly, in Saudi Arabia, where this study was conducted, most of the existing research on the FC before and during the COVID-19 pandemic focused on its challenges and on its impact on student achievement in various fields and at various levels of education [47–67]. Most of these studies revealed a positive impact on students and their learning. The FC had a highly positive impact on students' preparation before coming to class, and it provided them with the motivation to attend classes [58]. It improved their learning through the incorporation of engaging collaborative classroom activities, which resulted in improved learning and achievement [58]. Findings from another study revealed

that students enjoyed learning in a FC and were highly satisfied with the new approach; however, few reported issues with the time it demanded and their level of computer competency [48]. Furthermore, students were content with the FC because it provided them with more time for discussion and questions [67]. The implementation of blended learning in the Kingdom also revealed positive results. It facilitated exam preparation and concept clarification, though it did not show significant increase in students' grades [65]. Such approaches replace passive lecturing with active student-centered learning; however, it must be emphasized that students need to come prepared to get the most benefit out of the FC [65]. Another study that investigated the transition to blended learning in the Kingdom of Saudi Arabia concluded that it can be facilitated through orientation, the provision of computer labs, training programs, and easy-to-use curriculum design ideas [68]. Al-Zahrani's research [59] also suggests that the FC may promote students' creativity. Students, too, viewed the FC as an approach that may enhance their creativity. However, there were a number of challenges related to the FC namely the students' limited preparation. Thus, the study recommended that students be prepared to utilize the FC and be provided with adequate e-learning tools in addition to considering the students' study load and providing them with meaningful in-class activities [59]. The effectiveness of the FC on the development of student teachers' self-directed learning skills confirmed its positive impact too [56]. Such findings support the new direction in the Kingdom that encourages teacher educators to integrate non-traditional teaching strategies into their current practice in order to promote students' self-directed and independent learning [56].

2.1.2. The Features and Requirements of Flipping

O'Flaherty and Phillips [11] establish that there is no single model for the FC implementation but merely core features. They believe that there is a misunderstanding of the key elements necessary for successful flipping and, hence, caution educators against the danger of introducing the FC into their curriculum without fully understanding how to effectively translate the pedagogy into practice.

A number of researchers attempted to identify the features and requirements of the FC. Hamdan et al. [69], in their Flipped Learning Network, identify four key pillars of flipped classes represented by the acronym "F-L-I-P", where 'F' stands for Flexible Environment, 'L' stands for Learning Culture, 'I' stands for Intentional Content, and 'P' stands for Professional Educator. The first pillar requires flexible learning environments that promote active learning strategies provided mainly through interaction between students, their peers, and the instructor. The second involves a shift from the teacher-centered instruction to a student-centered learning culture. The third demands purposeful designing of content to be delivered either directly or independently in order to help learners develop skills and competencies, and the last focuses on educators who can respond to the demands of entirely active classrooms and mastery-based learning. The role of 'professional educators' in this model is believed to be more important than ever. In order to make a successful flip, educators need to be trained on how to engage students deeply in content [69], a view reiterated by Hwang et al. [70], who highlight the key role of teacher preparation. This view is significant here because it sheds light on the key role that instructors play when they understand the requirements, potential, and strategies that can help achieve the successful outcomes of flipping.

Scholars such as Chen et al. [43] find Hamdan et al.'s features of flipped learning [69] inadequate and too general and, hence, suggest further specifying the FC features to achieve a standardized pedagogical model. They believe that the former's focus is on 'what to learn' rather than on 'how to teach', gives privileges to the educators' view and overlooks that of the students, and does not account for the much-needed computer learning platforms. As a result, they propose supplementing the Flipped Learning Network's four pillars with three additional ones that are more fitting for higher education contexts. They suggest giving it the name 'Holistic Flipped Classroom' because of the three additional components they

added: Progressive networking activities, Engaging and effective learning experiences, and Diversified and Seamless learning platforms [43].

Simonson [14] listed a number of factors that instructors need to consider before they decide to flip, namely (1) an understanding of the rationale behind flipping and how it can be used to help meet the teaching goals, (2) a readiness to hand over some control to students, (3) a re-consideration of the purpose of class-time, (4) an awareness of the amount of time needed for preparation, (5) a knowledge of how to use technology to develop effective teaching materials and assessment tools, and (6) an ability to reflect. Furthermore, he highlighted the value of the instructors' feeling of competence, which he believes is determined by (1) content mastery, (2) a feeling of independence and autonomy derived from the amount of institutional support, and (3) a feeling of relatedness determined by the amount of social connection and supportive peers.

Brame [71] focused on facilitating learner-centeredness and, thus, proposes four flipping principles, which are (1) giving learners the opportunity to be acquainted with course materials prior to class, (2) offering learners incentives to come to class prepared, (3) including an assessment mechanism to assess understanding, and (4) providing in-class activities that enhance higher-order cognitive skills. These principles were adopted by Kim et al. [72], who added five more to form a combined model of nine principles. The additional principles proposed by Kim et al. [72] are (1) using technology, (2) providing students with guidance and incentives, (3) activating students' prior knowledge before class, (4) preparing sufficient in-class activities, and (5) promoting student–student interactions. Kim et al. [72] mapped all nine flipped classroom design principles against the features of Garrison et al.'s Community of Inquiry (CoI) framework and its revised version 'Revised Community of Inquiry' (RCOI) [22,73–75] (Table 1). Kim et al. [72] used these nine principles to examine the students' perceptions of the degree to which instructors addressed the presences of the flipped classroom. This study will draw on Kim et al.'s principles [72] to examine the degree to which instructors' transitioning into flipping are aware of the features or presences of the FC.

2.1.3. The Community of Inquiry Framework and the Flipped Classroom

The Community of Inquiry (CoI) framework is a theoretical reference widely used to examine teaching and learning practices in online and blended learning environments. It constitutes three features which Garrison [20] refers to as 'presences' that can be used to describe, explain, and improve online and blended learning. The 'teaching presence' is the force that plans and leads the learning in a constructive, collaborative, and sustained manner; the 'social presence' refers to the learners' ability to connect with other members of the learning community on a personal level; and the 'cognitive presence' refers to the learners' ability to construct meaning through collaborative inquiry [20]. The 'learner presence' is the fourth feature that was later added by Shea and Bidjerano [74] to the revised version of the framework RCOI, and which refers to the learners' strategic ability of self-regulation. This framework is a theoretical foundation that facilitates the understanding of the blended learning experiences of students. It maintains that blended or online learning takes place through the interplay between the three critical features of teaching, cognitive, and social presences. Each of these features has its own categories and indicators that can be used to assess the efficacy of the learning environment and the educational experiences. According to Garrison et al. [76], the teaching presence is a binding element that highlights the role of the instructor in course design and organization, discourse facilitation, and direct instruction. It is largely dependent on the role of the teacher in initiating, sustaining, and facilitating a collaborative Community of Inquiry. The social presence is concerned with the learners' ability to identify with the group, to communicate, and to develop personal relationships by projecting their personalities [77]. It constitutes several categories, which are affective expression, open communication, and group cohesion. The cognitive presence is concerned with the inquiry process whereby learners construct meaning and confirm

understanding [77]. Triggering events, exploration, integration and resolution are the categories that come under this presence.

The CoI has been used extensively by researchers to design and to assess online and flexible learning models. Some studies such as [46,78–80] employed the CoI to examine the efficacy of the FC or to explore how FC learners perceive the CoI variables. Several findings affirmed the validity and reliability of the CoI in examining the learners' experiences in blended learning environments [81]. Concerning the efficacy of using the CoI presences to investigate the success of the flip, Antonio [46] found that the teaching presence, social presence, and cognitive presence are all observed in the FC pedagogy. le Roux and Nagel [78] asserted that the CoI framework can reveal the limitations of the FC in a learning experience and, thus, can be used to inform practitioners on how FC teaching can be improved. Lee and Kim [79] too used the CoI framework to investigate the effectiveness of the FC in promoting a student-centered, active learning environment in terms of their sense of social and cognitive presences in flipped classrooms.

2.1.4. The Flipping Models

The literature provides several definitions that are used to highlight the different approaches or models of flipping. The FC started as a popular undertaking that can be implemented by individual teachers with minimal support [82,83]. As early as 2000, Lage, Platt, and Treglia defined inverted classrooms as contexts where " . . . events that have traditionally taken place inside the classroom now take place outside the classroom and vice versa" [2] p. 32. This definition highlights the act of moving tasks in time and space rather than focusing on increased learner engagement, autonomy, and student-centeredness [45]. This model emulates what Bergmann and Sams [82] refer to as 'flipped classroom101'; a model of flipping where class redesign takes place and where teachers new to flipping usually begin. Moore [84] labels it as 'flipped classroom' to distinguish it from other flipping models, and he places it first on his spectrum of the Flipped Learning Primer. It is the first step before moving to the 'flipped learning' model, where the focus becomes more on personalized learning and mastery [85]. This model represents an approach where students listen to podcasts or view video-recorded lectures at their leisure and then use face-to-face classroom time for interactive, instructor-facilitated learning that includes discussion, case scenario analysis, and application of content acquired in pre-class work [86]. However, this model, which suggests that any assigned pre-class reading task followed by classroom discussion constitutes a flipped class, is rejected by some scholars such as Bishop and Verleger [44] because, at this level, the FC is perceived merely as a process of re-ordering the teaching and learning activities to allow class time to be used for further clarifications and practice.

At another level, Abeysekera and Dawson [45] define the FC as an approach that moves information transmission out of class and uses class time for active and social learning activities. They reaffirm that there is no single agreed definition of the FC, but they highlight a set of common characteristics that need to be considered when flipping and these include the use of pre-and post-class activities; a switch in the use of in-class and out-of-class time; and the use of technology to emphasize active, peer learning, and problem-solving. This definition bears signs of a shift from mere flipping in time and space to another level that is labeled by Hamdan et al. [69] as 'flipped learning'. At this level, the definition of flipping is focused not only on the logistic re-arrangement of in-class and out-of-class activities but also on the impact of this switch on deeper learning. This is clearly spelled out in the Flipped Learning Network's definition [4], p.1, which states:

> *Flipped Learning is a pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter.*

This definition makes a clear distinction between the first model on the flipping spectrum, which is called 'flipped classroom', and the following one, which is called

'flipped learning' [84,85]. The two models are not identical, and the first does not necessarily lead to the second. The implementation of the 'flipped classroom' does not necessarily bring about 'flipped learning', and by giving learners resources to learn outside the classroom, instructors may have already implemented some of the features of the FC but teacher preparation and good organization are also needed because 'flipped learning' is of a higher level than that of a 'flipped classroom'. What is labeled as 'flipped learning' requires instructors to carefully consider classroom activities that enhance active learning and promote student-centeredness [69]. In this model, there is a switch in perspective from classrooms where projects serve as tools for remembering, understanding, and applying content to classrooms where projects become tools for creating, analyzing, and, evaluating content [85]. The focus in 'flipped learning' is on the processes that students engage in and the outcomes they strive towards within the logistical reorganization of the 'flipped classroom', which means that if the 'flipped learning' requirements are not satisfied, then flipped classes will be indistinguishable from traditional ones [87].

At a more advanced level, Bergmann and Sams [86] define flipping as the switching of the attention away from the teacher and directing it towards the learner and the learning process and replacing direct large-group instruction with more personalized instruction, a model they label as 'flipped mastery'. This model was also recognized by Moore's [84] spectrum of the Flipped Learning Primer. It is a model where learners are given the opportunity to work in groups or individually at their own pace; formative and summative assessments follow, and then, remedial action is provided individually and as required [84]. Any flipped model implementation lies on a continuum that extends between the flipped classroom and a fully personalized, mastery-based, project-centered classroom [85].

Contrary to some researchers who view one model of flipping as superior to others, this study does not prioritize any because each model might be equally effective when used in a particular setting for achieving a specific learning outcome. The flipped classroom spectrum opens new doors for each educator because it encompasses instructors from all talents, for any subject matter, and for any student of any age and instructors who are new to flipping will be able to grow along this model [84]. This view is advocated in this study as its objective is not to undermine the value of using any of the flipped classroom models, be it the 'flipped classroom', 'flipped learning', or 'flipped mastery', but to explore the perceptions of instructors transitioning into flipping with regard to their knowledge of the existence and potential of each of these models, especially that the majority of earlier research that reported the outcomes of flipping did not specify or describe the type of model used. By investigating where instructors stand at the flipping continuum, it might be possible to assess how prepared instructors are to hand over more control to their students and, thus, how prepared they are to move closer to student-centered classes. Figure 1 maps the flipping models mentioned earlier against different pedagogical theories. The mapping suggests that the more control instructors' hand over to their learners, the closer they move towards 'flipped learning' and 'flipped mastery', which are rooted in the theories of constructivism and social-constructivism.

It is clear that a multitude of perceptions of the flipping features and flipping requisites are found in the literature, as shown in the section above; however, many of these features overlap. This research will draw on the work of some of these researchers to gain deeper insights into how the FC was perceived by instructors new to flipping. It will first explore the instructors' perceptions of the requirements of flipping. To this end, the researchers will use Simonson's [14] list of prerequisites, a list that the researchers found most comprehensive and convenient for the purpose of the study and upon which they based some of the questions in their survey. The researchers will also investigate the underlying perceptions of faculty members of the FC pedagogy by assessing it against Kim et al. 's [72] combined principles. Both tools will constitute the bases for investigating the instructor's understanding of what it takes to implement a successful flip. The study will also build on the notion that flipping models lie on a continuum starting with the 'flipped classroom' and advancing towards 'flipped learning' and 'flipped mastery' [84,85,88]. This

will enable the researchers to assess the instructors' awareness of the existence of different flipping models, which might reflect their level of understanding of the various workings of this approach.
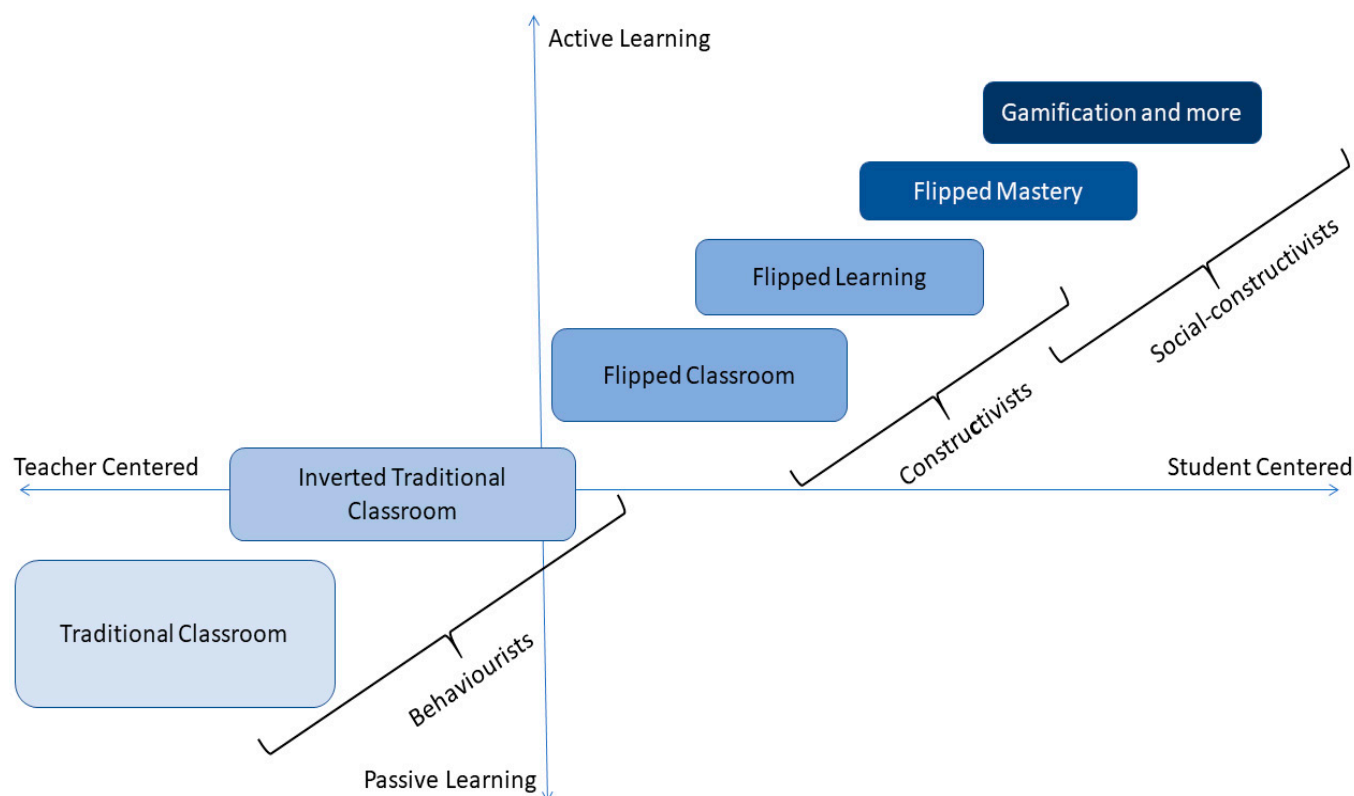

Figure 1. Mapping the different flipping models against different pedagogical theories.

To answer the first research question, the list of factors that Simonson [14] compiled to help instructors decide whether to flip was used. These factors included the instructors' readiness to hand over some control to their students, an understanding of the rationale behind flipping and how it can be used to help meet the teaching goals, a re-consideration of the purpose of class time, an awareness of the amount of time needed for preparation, knowledge of how to use (unfamiliar) technology to develop effective teaching materials and assessment tools, and the dedication of time to reflect on the teaching practices. Furthermore, Simonson [14] highlighted the value of the instructors' feeling of competence, which is determined by their thorough understanding of the course content; their feeling of independence and autonomy, which is determined by the amount of institutional support; and their feeling of relatedness, which is determined by the amount of social connection and peer support. This study will draw on these factors to investigate the instructors' degree of awareness of these prerequisites during their first attempts at flipping. This will constitute the bases for investigating the instructor's readiness to implement a flipped learning environment.

As for investigating the instructors' awareness of the requirements for the successful implementation of the FC, Garrison [20] CoI (Community of Inquiry) framework and its revised version RCOI (Revised Community of Inquiry) [74] were used. The CoI evolved based on the theory of socio-constructivism for blended learning focusing on teamwork and interaction in the learning environment. Kim et al. [72] extracted nine principles based on Garrison [20] CoI and its revised version RCOI [74] and used them to examine the students' perceptions of the degree to which instructors addressed the presences of the flipped classroom (Table 1). This study will employ Kim et al.'s [72] nine principles in order to examine the degree to which instructors transitioning into flipping were aware of

the features or presences of the FC, i.e., to what extent they were implementing a social-constructivists approach to teaching. This will help gain insights into the instructors' degree of readiness to implement student-centered approaches to teaching.

Table 1. Adapted with permission from Kim et al.'s flipped classroom design principles mapped against the RCOI presences [72].

Kim's Design Principles of the Flipped Classroom Mapped Against the RCOI Presences
Teaching Presence
Provide prompt/adaptive feedback on individual or group works Provide a mechanism to assess student understanding Provide an incentive for students to prepare for class
Cognitive Presence
Provide clearly defined, and well-structured guidance Provide clear connections between in-class and out-of-class activities Provide an opportunity for students to gain first exposure prior to class
Social Presence
Provide technologies familiar and easy to access Provide facilitation for building a learning community
Learner Presence
Provide enough time for students to carry out the assignments

3. Methodology

3.1. Participants

Thirty-seven female faculty members representing all six colleges (Table 2) participated in the study, which spanned over a period of three semesters. While all of the 59 females who have conducted FC were invited to participate in the interview and survey, just more than half participated. The 59 were all the female instructors who were preparing to apply for the UK Higher Education Fellowship (HEA) program and who were introduced to the FC in one its workshops. Out of those 59, only 30 responded to the survey. Therefore, the total sample was 37, 7 of which were used for the interview and the remaining 30 of which were the ones who took part in the survey. This study took place in a typical Saudi university where male and female campuses are normally separated. The majority of participants who took part in this study were from the College of Humanities, followed by the Deanship of Educational Sciences, and then the College of Business Administration. The study was carried out on the female campus because the female instructors made the decision to transition into the FC first. The sample was purposefully chosen from the six colleges to investigate the faculty's perceptions of the flipped classroom pedagogy and its requirements regardless of their field of specialization. The majority of participants (80%) learned about the FC from professional development workshops run by the university. The remaining participants (20%) learnt about it through personal inquiry. Most of the participants (87%) attended between one to three workshops on the FC, and the remaining (13%) implemented it without any training.

Demographically, participants represented 12 different nationalities—American, Australian, British, Canadian, Egyptian, Indian, Lebanese, Malaysian, Pakistani, Saudi, Slovak, and Sudanese—as the university has a diverse group of faculty from around the world. The participants span three different age groups: 27% (25–39 years), 46% (40–49 years), and 27% (50–59 years). Seventy percent ($n = 26$) were Ph.D. holders and thirty percent ($n = 11$) were Master's holders with an average teaching experience of 15.9 years.

Table 2. Participants' information.

College	No. of Participants	Percentage
College of Humanities	12	33%
Deanship of Educational Services	9	24%
College of Business Administration	6	16%
College of Law	4	11%
College of Computer and Information Sciences	3	8%
College of Engineering	3	8%
Total	37	100

3.2. Tools and Procedures

This study, with its descriptive research design, was carried out in three stages—interviews, survey, and instructor self-reflection reports—as shown in Table 3, and focused on the 59 instructors at this university who have implemented the FC. In stage I, seven participants volunteered to take part in the one-to-one semi-structured interviews. The interviews comprised 11 questions that intended to explore the instructors' perceptions and practices related to the FC. The 20 to 30 min interviews were recorded and then transcribed to conduct qualitative data analysis. In stage II, thirty participants from all six colleges took part in the survey (response rate of 50.8%). In stage III, the self-reflection form, which was based on Kim et. al's [72] instructor reflection protocol, was emailed to the same thirty participants who responded to the survey, to which sixteen participants replied. At this last stage, we focused on the instructors who had participated in the survey to understand their FC practice in more detail.

Table 3. Stages of study.

Participants	Stage I: Interviews	Stage II: Survey (Open and Close-Ended Questions)	Stage III: Self-Reflection Reports
Number	7	30	16
Percentage	11.9% (7/59)	50.8% (30/59)	53% (16/30 from Stage 2)
College/Deanship	Business Administration, Humanities, Law	Business Administration, Computer and Information Sciences, Educational Services, Engineering, Humanities, Law	Business Administration, Computer and Information Sciences, Educational Services, Humanities, Law

In stage I, the interview questions investigated why and how participants implemented the FC. Examples from the interview questions were 'Why did you implement the FC?', 'How did you conduct the FC?', and 'What was the outcome of the FC?'. The survey in stage II was prepared in light of the stage I interview findings and was guided by Simonson's [14] list of FC requisites and Kim et al.'s [72] nine FC design principles (cognitive, social, learner, and teaching presences), which were based on Garrison et al.'s [22] Community of Inquiry framework (CoI) and its revised version (RCOI) [74]. The survey constituted three parts that elicited qualitative and quantitative data. Part I (18 items) collected the participants' personal information and their FC perceptions, reasons for flipping, and challenges faced. Part II (32 items) inquired about the instructors' awareness of the value of training and teachers' preparedness to implement the FC (23 items), and the instructors' awareness of Kim et al.'s principles [72] (9 items), using a 5 point Likert scale, where 1 stands for strongly disagree, 2 stands for disagree, 3 stands for agree, 4 stands for strongly agree, and 0 stands for no opinion. Part III had three open-ended items that investigated the instructors' readiness to continue/discontinue using the FC and their recommendations. In the final stage (stage III), information on the implementation of the FC was elicited from instructors who produced a self-reflection report with the prompt asking them to describe in detail all the steps they went through whilst implementing one of their most successful

flipped classrooms. Instructors were given a period of two weeks to finish the report with no constraints on the length of their reflective reports to allow them to write freely. Two samples of the reflective reports are provided in Appendix A.

An expert panel of five experienced members in the field of flipped classroom implementation and research instruments' development was formed. The panel included one member with a research tool development background, two members with pedagogical backgrounds, and two members experienced in flipped classroom implementation. They were asked to judge the relevancy and the clarity of the survey items to ensure its content validity. They were provided with a scoring rubric ranging from 1 to 4, where 1 stands for Not Relevant and 4 stands for Very Relevant on the relevancy scale. On the clarity scale, 1 stands for Not Clear and 4 stands for Very Clear. In order to reach the numeric value of the content validity, Lawshe's [89] Content Validity Ratio CVR formula (Ne–N/2)/(N/2) was used, where Ne is the total number of panelists judging the item (Very Relevant/Very Clear), and the N is the total number of panelists. All items that received less than 0.99 acceptance from the panelists were modified and some were deleted after exposing them to the panelists again, until all the items were scored as relevant and clear with the numeric ratio 0.99. Then, for reliability purposes and in order to ensure consistency across the parts of the survey items, the survey was piloted on 10 participants randomly chosen from the target population of instructors (Table 4); then, the coefficient was calculated using the statistical package SPSS Version 20, where the internal consistency method with the option (if the item was deleted) was used and where the Cronbach's alpha coefficient was 0.85, as shown in Table 5 below.

Table 4. Case-processing summary.

Cases	N	Percentage
Valid	10	100.0
Excluded	0	0.0
Total	10	

Table 5. Reliability statistics.

Cronbach's Alpha	N of Items
0.854	32

As for the qualitative data derived from the interviews, survey, and participants' reflection, Lincoln and Guba's [90] evaluative criteria were used to ensure the rigor and trustworthiness of the data. Data credibility and confirmability were obtained by triangulation, which was adopted where more than one source was used to obtain information. Multiple sources of data collection helped eliminate any effect of the researchers' personal opinions regarding any of the items investigated during the study. With respect to transferability, despite giving a thick description of the setting and the participants of the study, it might be difficult to ensure the transferability of the conclusions drawn from the current study to other settings and situations because of the small size of the study sample and the unique environment of this small private university. In order to fulfill Lincoln and Guba's last criterion, which is the dependability of the study and how far its findings are consistent with Lincoln and Guba [90], the external audit technique was adopted.

3.3. Data Analysis

Participants' responses to the survey items which represented the quantitative data were redistributed according to Kim et al.'s [72] nine flipped classroom design principles for data analysis requirements. Then, the data analysis was performed using the Statistical Package for the Social Sciences (SPSS) Version 20, where the frequencies and percentages of their responses towards each of the survey items were calculated and displayed in charts as

shown in the Results sections. The 20–30 min interviews were recorded and then transcribed for conducting qualitative data analysis. In their reflections, instructors produced 156 items (4384 words) which cover the pre, during and post activities they implemented in addition to the positive points and the challenges they faced while implementing the FC. The length of the reflections varied from one instructor to the other. The analysis was conducted using the QDA Miner Program for qualitative data analysis. Reflections were coded at the sentence level to explore participants' experience with transitional classroom, transitioned classroom, and flipped classroom. The analysis resulted in five main code levels with a number of sublevels. The first level was the pre-class activities which the instructors summed up as using Moodle, online videos, uploaded materials; preparing a presentation; and using WhatsApp. The second level focused on the in-class activities, which were group discussion, collaborative activity, participation, and asking questions. As for the third level which was related to the post-class activities, the instructors reported using four different types of assessment: quizzes, research, reflection, and exams. The other two levels reported by the instructors in their self-reflection revealed the advantages of the FC (responsibility, engagement, and being interactive) and the challenges faced (time constraints, video selection, and unprepared students).

4. Results

4.1. What Factors Do Instructors Transitioning into Flipping Believe to Be Significant Requisites for Its Implementation? What Challenges Do They Face? What Recommendations Do They Make?

To answer the first research question, results from surveys, interviews, and self-reflection reports were used to investigate the degree of the instructors' awareness of the factors that are important requisites for the implementation of the FC (Table 6). Data collection was guided by Simonson's [14] list of factors that he compiled to help instructors decide on whether to flip. The following section will present findings on the instructors' perceptions of these factors to check on their readiness to flip.

Table 6. Instructors' rationale behind the use of the FC by frequency of mentions.

Items	Survey (Open-Ended Questions)	Interviews	Instructor Reflections	Total (Percentage)
Instructors' rationale for using the FC				
• to engage students	6	8	1	15 (20%)
• to enhance learning	2	11	-	13 (17%)
• to promote autonomous learning	-	8	1	9 (12%)
• to achieve learning outcomes	-	7	-	7 (9%)
• to enhance collaborative learning	7	-	-	7 (9%)
• to encourage extra learning	-	6	-	6 (8%)
• to use diverse teaching strategies	2	3	-	5 (7%)
• to enhance participation	-	4	-	4 (5%)
• to promote active learning	2	-	2	4 (5%)
• to maximize the use of class time	2	-	-	2 (3%)
• to enhance learners' confidence	2	-	-	2 (3%)
• to achieve higher-order learning	2	-	-	2 (3%)
Total (Percentage)	25 (33%)	47 (62%)	4 (5%)	76 (100%)

One important factor listed by Simonson [14] was the instructors' understanding of the rationale behind flipping. This understanding may be used as an indicator of how confident instructors are in their ability to try out a new pedagogy and how well they could use it to serve their teaching goals. The findings, listed by frequency of mentions in Table 6, showed that 20% of the mentions involved using the new pedagogy to engage their learners such as "students become more engaged, more enthusiastic, and more interactive."

(Interviewee G). In the survey open-ended questions, one instructor mentioned that it is "an opportunity to increase interaction with students." (Participant 27), and another stated that "it enhances engagement and nurtures students' autonomous learning skills." (Participant 11). As for the self-reflection reports, one instructor said that she uses it to "encourage students' participation and increase level of engagement." (Participant 5). The second highest frequency of mentions (17%) on the rationale for using flipping was to enhance learning as in the statements "to increase level of knowledge and understanding" (Interviewee F), and for attaining "higher level of learning" (Interviewee E). In the open-ended survey questions, one instructor reported that "it improves students' learning and maximizes class time management" (Participant 9). Some of the remaining reasons given by instructors for flipping were to deliver the course learning outcomes (9%), to reinforce learning (8%), to promote active learning (5%), and to achieve higher-order learning skills (3%) (Table 6). The latter finding may indicate that most instructors did not perceive the FC as an active learning pedagogy that may help students achieve Bloom's higher-order thinking skills within the classroom [14]. However, some were aware that the FC may help engage learners and reinforce their learning as they will have encountered the course materials before coming to class. This, in turn, will enable instructors to use class time to check on students' understanding and to further enhance their learning. Another point worth mentioning here is that, although engaging learners was one of the most cited reasons that motivated instructors to flip (20%), only 9, 5, and 3% of the mentions revolved around using the FC to promote collaborative learning, to enhance students' participation, and 3% to boost students' confidence, respectively (Table 6). This may indicate that participants were not investing in this pedagogy to enhance social constructivism through encouraging learners to interact and construct meaning collaboratively with their peers. The FC has its roots in the constructivist and social-constructivist perspectives on learning because it highlights the role of the learner in knowledge creation and emphasizes the role of teacher and peer scaffolding [91]. However, when instructors focus mainly on technology-driven pre-class activities without concentrating on in-class activities and group work, the constructivist and social constructivist perspectives on learning afforded by the FC may be overlooked [44,91]. This is evident in the qualitative and quantitative data elicited from the instructors, which show that instructors were not making optimal use of class time and its activities and assessments. By limiting collaborative activities too, instructors will not be focusing on enhancing students' higher-order thinking skills. The revised version of Bloom's Taxonomy demonstrates the strength of the FC, where the lower-order thinking skills that students normally employ during didactic lectures are replaced by the higher-order thinking skills that are required for more in-depth discussions and collaborative activities [92].

However, comparing qualitative (Table 6) with quantitative (Table 7) data shows that 93% of the instructors confirmed that knowledge of the underlying pedagogy was crucial to implementing the FC and 77% stated that having a clear idea of how to implement the FC before actually starting to flip was necessary (Table 7). However, findings from the qualitative data (Table 6) may indicate that instructors did not fully understand the pedagogical underpinnings of the FC. Table 7 lists the percentages of participants' responses to the survey statements from the highest to the lowest value.

Moreover, when instructors were asked (in the open-ended question in the survey) to define the FC, 39% defined it as a form of reversed teaching and 23% perceived it as an innovative teaching pedagogy (Table 8). These findings further confirm earlier findings that instructors did not fully understand the workings of this pedagogy. They seemed to be ready to try it, but they did not have enough or proper training on its implementation.

Table 7. Survey findings on instructors' perceptions of the flipped classroom implementation.

Survey Statements	Participants' Response (*n* = 30)
31. My colleague(s) classroom post-observation feedback on my flipped classroom practices was motivating.	100%
2. Knowing about the theory behind the flipped classroom is essential for implementing it.	93%
12. Observing my colleagues flipping classrooms made me rethink my own practices.	93%
14. Informing my students about the flipped classroom and/or its workings before implementing is very important.	90%
21. Providing learners with a roadmap on how to approach the pre-class learning resources facilitates their learning.	90%
22. Giving my students ample time to go through the pre-class learning resources before the in-class discussion is critical for its success.	90%
23. Providing in-class feedback to students on the flipped classroom topic is very important.	90%
32. Encouraging learners to be on the lookout for better learning/teaching resources enhances their understanding of the course content.	90%
10. Discussing my flipped classroom experience with colleagues was helpful.	87%
28. Providing post-flipped classroom activities encouraged my students to further explore the topic.	83%
9. Accessibility to an online platform to upload flipped classroom materials is necessary	80%
18. Preparing assessment tasks for each flipped classroom is very important	80%
24. Providing learners with accessible technologies that they are familiar with facilitate the implementation of the flipped classroom	80%
7. Having a clear idea of how to implement the flipped classroom before actually starting it was necessary.	77%
27. Flipping the classroom worked better with some topics than with others.	77%
3. Attending flipped classroom training sessions was helpful.	73%
11. Sharing my flipped classroom learning resources with colleagues is important.	73%
1. There is a strong relationship between the mastery of course content and the implementation of the flipped classroom.	70%
19. There is a need to provide learners with links between the pre-class and the in-class flipped classroom activities.	70%
4. Training on IT matters related to flipping classrooms was essential.	67%
5. It is preferable to experience flipped classroom before you actually implement it.	67%
15. It is crucial to provide learners with learning resources for the flipped classroom activity at the beginning of the class.	63%
17. Providing my learners with incentives (e.g., grades, bonus marks) for flipped classroom tasks is necessary.	63%
13. My lesson plan for a flipped classroom was different from the usual lesson plan	60%
16. Providing learners with a multitude of pre-class learning resources can be overwhelming to them.	60%
8. Finding the appropriate learning resources for students to prepare before coming to class was challenging to me.	53%
6. Flipping classrooms works best with junior/senior students.	47%
29. Facilitating students' networking and collaboration in doing the flipped classroom activities (Moodle forums, WhatsApp group chats, classroom discussions . . . , etc.) is challenging	47%
20. Flipping classrooms works better in classes with a larger number of learners (over 20 students).	40%
30. Implementing flipped classrooms with freshman/sophomore students was a real challenge.(negative)	37%
25. My previous experiences implementing the flipped classroom did not feed into my current implementation. (negative)	7%
26. The time invested in preparing the flipped classroom activities was not worth it.(negative)	7%

Table 8. Instructors' definitions of the FC by frequency of mentions in survey. $n = 30$.

The Instructors Perceive of the FC	Count	Percentage
Instructors perceive the FC as		
● reversed teaching	5	38.5%
● an innovative teaching pedagogy	3	23.0%
● a student-centered pedagogy	3	23.0%
● one of the best instructional methods	1	7.7%
● a type of blended learning	1	7.7%
Total (Percentage)	13	100%

Another FC requisite mentioned by Simonson [14] is related to the instructors' alteration of their normal use of class time. The findings indicated that only 3% responses were to maximize the use of class time (Table 6). This may be an indicator that instructors were not aware of how to use the FC to make the best out of class time after students have familiarized themselves with the content at home. Ideally, this time can be used to assess learning and to further reinforce it by providing further practice, remediation, and/or personalized or customized learning. Students' lack of compliance or resistance to working alone at home which was one of the challenges may have contributed to this result.

Another key factor mentioned by Simonson [14] was the instructors' readiness to hand over control to students. The findings indicated that about a quarter of the responses defining the FC (23%) revolved around the FC being a student-centered pedagogy (Table 8) and few responses (12%) identified the FC as a tool that will enhance autonomous learning (Table 6). This indicates that instructors were not fully aware that this pedagogy requires them to hand over more control to their students. They did not seem to recognize the potential of this approach in enhancing independent learning. It is worth mentioning that this attitude was conveyed not only by instructors but also by students who seemed to be resisting the change. Evidence from findings in the open-ended survey questions on the challenges that instructors faced revealed that one major challenge was students' lack of compliance (Table 9), as nearly half of the challenges that were mentioned (42%) pertain to this. Some instructors stated that, "Some students did not really take it seriously.", "A few of the students didn't do the work assigned.", and "Some of the students still came unprepared." As for the self-reflection reports, one instructor mentioned that "Not all of them read the assigned course materials." (Participant 13). In the interview, one teacher reported that "the flip was not successful as only four out of twenty five students watched the videos" (Interviewee D). This was a serious issue that was affecting the implementation of the FC. It may have been that instructors were not using appropriate pre-class activities and/or assessment tools that engaged learners to come prepared. Other less significant challenges that instructors reported, shown in Table 9, were the students' negative perception of the new pedagogy (5%), students' recurrent absenteeism (5%), and students' resistance to change (3%). All these findings may indicate that students were not against the use of the FC, but that the problem may have been due to the instructors' misunderstanding of how to implement it, especially by not giving students ample opportunities to take charge of their own learning.

Another factor compiled by Simonson [14] highlighted the amount of time needed by instructors for preparing materials for the FC. The findings revealed that 28% of all responses were related to the amount of time needed for preparing materials for the FC (Table 9). This was further confirmed by one of the interviewees who reported that the preparation for the FC was time consuming: "Sometimes you have to view many videos and choose the best one. It takes time. So, I think if you want to use the flipped classroom, . . . once or twice is sufficient—One topic or two topics, but not more than two" (Interviewee D). Another instructor mentioned in the open-ended survey that "flipping is time consuming and preparing the materials is tedious" (Participant 23) and another one in the self-reflection report stated that she "needed time to explore and find videos or

materials for the flipped classroom" (Participant 12). However, the quantitative data from the surveys showed that 87% (7% in item 26 in Table 7, as the statement was negatively worded and the remaining 6% were of no opinion) found that the extra time they invested in preparing for the FC was worth the effort (Table 7). Moreover, 8% of responses were about the challenges faced in finding relevant materials (videos) and fewer responses were related to the difficulties they faced accessing certain online materials, preparing materials, or finding relevant resources (Table 9).

Table 9. The challenges instructors faced while transitioning to the FC by frequency of mentions.

Items	Survey (Open-Ended Questions)	Interviews	Instructor Reflections	Total (Percentage)
Challenges faced by instructors using the FC				
• students' compliance	6	8	1	15 (42%)
• time	1	4	5	10 (28%)
• finding relevant videos	-	2	1	3 (8%)
• student absenteeism	2	-	-	2 (5%)
• student perception of learning	2	-	-	2 (5%)
• issues with technology use	-	1	-	1 (3%)
• inaccessible materials	-	1	-	1 (3%)
• students' resistance to change	1	-	-	1 (3%)
• preparing materials	1	-	-	1 (3%)
Total (Percentage)	13 (36%)	16 (44%)	7 (20%)	36 (100%)

As regards the factor concerned with the use of (unfamiliar) technology, 67% of the participants asserted the value of training on the use of IT to help implement the FC (Table 7) but only 3% of the responses mentioned facing issues with technology use (Table 9). Hence, the IT support provided by the university helped instructors in implementing the FC and only a few complained about facing technical issues.

As far as the instructors' ability to reflect, 77% mentioned that they were reflecting on how to implement the FC before class (Table 7). Further evidence on instructors' reflection is evident in one of the interviewees quotes: "When I first conducted the flipped classroom, I just gave students a video (before introducing the topic) . . . and asked them to write about what they learned. The students, however, could not give much information . . . . So then (in the next semester) I gave a bit of introduction on the topic, and asked students to look for certain elements in that video." (Interviewee D). Thus, reflection helped instructors revise and change their approach accordingly. Simonson [14] also stated that the instructors' confidence in flipping depended on their feeling of competence, which is determined by their mastery of course content. In this study, 70% of the participants reported that the choice of the courses they flipped depended on their mastery of the course content besides other considerations. Quantitative data showed that instructors would use the FC more with Freshman/Sophomore (63%) (37% in item 30 in Table 7, as the statement was negatively worded) than with Junior or Senior students (53%) (47% in item 6 in Table 7, as the statement was negatively worded). Before they actually decide to flip, instructors would also consider the topic to be flipped (77%) and class size (60%) (40% in item 20 shown in Table 7, as the statement was negatively worded). It seems that implementing the FC with younger learners was easier as they were new to university education and may have accepted the approach much easier. This finding is confirmed by Alsmadi et al. [7], who found that Saudi younger university students were more satisfied with online learning. The topic to be flipped was also of concern to instructors who confirmed that there are topics that were easier to flip than others. They also agreed that it was easier to implement the FC in a class with no more than 20 students. Institutional support was another concern for instructors, and 73% acknowledged their need for training sessions. As

for peer support and mentoring, 87% reported that sharing FC ideas with colleagues was helpful, 93% agreed that observing colleagues enabled them to re-think their own practices, and 73% found that sharing learning resources with colleagues was helpful (Table 7). Hence, they seemed to value the importance of training, peer support, collaboration with colleagues, and mentoring.

Several recommendations were depicted in the qualitative section of the open-ended question in the survey (Table 10). Instructors made suggestions for better implementation of the FC namely by planning ahead for the FC (36%) in statements such as "Plan in advance, provide learners with roadmap to access learning resource facilities, choose appropriate topics etc." (Participant 24) and "Pre-class info about flipped class and its outcomes should be explained and shared with students before flipped class activity" (Participant 15). As for receiving more training (27%), instructors recommended "Training for both faculty and students" (Participant 7), and "Conducting more workshops and training to promote flipped classroom approach" (Participant 11). This further confirms that more practical training was needed. Other recommendations included running awareness campaigns for students and faculty (18%), offering/receiving peer support (9%), and having more IT support (9%).

Table 10. Instructors' recommendations for better implementation of the FC by frequency of mentions in survey.

Instructors' Recommendations for Better Implementation of the FC	Percentage
• planning ahead	4 (36%)
• training	3 (27%)
• awareness campaigns for students and faculty	2 (18%)
• peer support	1 (9%)
• IT support	1 (9%)
Total (Percentage)	11 (100%)

4.2. How Do Instructors Transitioning into Flipping Perceive the Presences (Features) of the Revised Community of Inquiry?

As for the second research question, findings on how the instructors perceived the RCOI presences, the quantitative data revealed that instructors were aware of the importance of the elements of Garrison's [20] presences. The results in Table 11 are presented in a descending order within each presence. Instructors' awareness of the implementation of some principles ranked higher than others, but generally speaking, the 'learner presence' ranked highest (90%); followed by the 'teaching presence' (78%); then the 'cognitive presence' (74%); and lastly, the 'social presence' (67%). Awareness of instructors of the principles under the social presence ranked lowest compared to those in the learning, teaching, and cognitive presences.

Under the teaching presence, instructors were aware of the importance of providing prompt feedback (90%) and using assessment tools (80%) as shown in Table 11. To assess students' understanding, some instructors reported using quizzes, discussion forums, and classroom discussions to ensure that students covered the materials before coming to class or to gauge students' understanding of a topic before discussing it further. "My objective here was just to make sure that they are in line with the topic and to avoid irrelevant stuff and achieve the objectives of the session." (Interviewee B). However, some instructors were not that eager to provide incentives for class preparation (63%) and that may have been the reason why they could not make the best out of the flip as many students did not comply (Table 9) and came unprepared. Some instructors reported allocating marks to some tasks but not to all (Interviewee B), and some allocated no marks at all "I never give them any marks for flipped classroom tasks. That is why I think they are not that serious about watching the video before coming to class" (Interviewee D). However, there were some

who reported allocating marks for pre-class assignments depending on the complexity of the task. "I ask them to analyze the video . . . it is allocated 15%, but they have to come up with more analysis in the report and make a presentation" (Interviewee G).

Table 11. Instructors' awareness of the RCOI presences.

Kim's FC Design Principles	Participants' Response (*n* = 30) Responses (Percentage of Each Principle)	Percentage of Each Presence
Teaching Presence		
Provide prompt/adaptive feedback on individual or group works	90%	78%
Provide a mechanism to assess student understanding	80%	
Provide an incentive for students to prepare for class	63%	
Cognitive Presence		
Provide clearly defined and well-structured guidance	90%	74%
Provide clear connections between in-class and out-of-class activities	70%	
Provide an opportunity for students to gain first exposure prior to class	63%	
Social Presence		
Provide technologies familiar and easy to access	80%	67%
Provide facilitation for building a learning community	53%	
Learner Presence		
Provide enough time for students to carry out the assignments	90%	90%

As regards the cognitive presence, instructors expressed their agreement with the importance of providing well-structured guidance (90%) in Table 11. The majority of interviewees informed their students about their upcoming use of the flipped model in their course syllabi. Only few reported implementing it on an ad hoc basis. Some provided their learners with detailed step-by-step instructions (Interviewees A, B, G). "Planning structured activities is very important for the flipped classroom. I define the task and process for completing the task and describe the steps students need in order to prepare their work." (Interviewee A). The findings also indicate that instructors made connections between the in- and out-of-class activities (70%). Some interviewees mentioned that they use pre-class worksheets to give guided instructions that will be followed by various in-class activities. Additionally, one instructor reported providing post-class additional materials (Interviewee D). Interestingly, interviewees reported that when students did the pre-assigned tasks online, they found further relevant resources by themselves. However, some did not seem as keen on providing students with various opportunities to gain exposure to the teaching materials before class (63%) (Table 11). " . . . sometimes it is difficult to find a video suitable to their level (introductory courses) or to the topic . . . " (Interviewee D). The reason behind this could be that instructors were not fully aware of the importance of providing students with various teaching materials to cater to the differences between their learning styles or they may have been avoiding overwhelming their learners with too many resources. Concerning the social presence, instructors believed in the importance of providing students with technologies that are familiar and easy to access (80%), shown in Table 11. The majority of instructors used the LMS to upload the FC pre-class learning resources. " . . . Students nowadays are exposed to various multimedia resources . . . I upload the video on Moodle . . . " (Interviewee G). The technology assisted with the FC and " . . . the students like this very much because they can watch the video any time whenever they are free, . . . they just click the link and they can watch the video on

their mobile phones ... " (Interviewee G). However, only 53% believed in the importance of facilitating the building of a learning community (Table 11). This finding might indicate that instructors were not fully investing in collaborative learning activities. This could be a major misconception that ignores the value of building communities of inquiry through collaboration and group work. Nonetheless, there were some instructors who reported facilitating group discussions formally via the Learning Management System (Moodle) discussion forums and chat boards (Interviewee F) and informally via WhatsApp group chats (Interviewees A, C). As for the learner presence, instructors were well aware of the importance of providing students with ample time to carry out the assignment(s) (90%) (Table 11). The findings under this item cannot be conclusive as only one principle was used to assess the learner presence.

5. Discussion and Limitations

With higher education moving more towards flexible models of teaching especially after the COVID-19 pandemic, the flipped classroom is becoming increasingly popular. If the FC is practiced correctly and thoughtfully, it might serve as an instructional model that promotes higher forms of cognitive domains [38].

In this study, findings on the instructors' perceptions of the requisites and the pedagogical understanding of the FC indicated that instructors making their first attempts at flipping seemed to be quite motivated. In spite of being at the early stages of the FC implementation, the findings showed that participants were well aware of its requirements as depicted in their responses to the survey questions and interviews. They were aware that their mastery of course content, the student's level, and class size might affect their decision to flip despite the fact that they were new to flipping. However, there seemed to be a discrepancy between their beliefs and their actual implementation. The level of confidence in implementing a new pedagogy partly depends on the understanding of how it works [14]. The implications of this may be far-reaching because if instructors lose their motivation to flip, they may discontinue using it.

Other findings revealed that many instructors in this study perceived the FC as an innovative pedagogy that may promote student engagement. However, the majority perceived it simply as a form of reversed teaching with a mere change of logistics. Nevertheless, using that model on its own may not promote active learning. The model of flipping mostly reported in the data collected best matches Bergmann and Sams's [82] model of "flipped classroom 101", where the FC is seen merely as an act of moving normal in-class conduct to the home. This model might be useful in certain contexts such as when the instructor uses it for diagnostic purposes before a new topic is introduced, but it may not help the students achieve deeper levels of learning.

Examining instructors' awareness of Kim et al.'s [72] flipped classroom principles indicated that building a community of learners was the principle they were least aware of. This is not unexpected as many perceive the FC simply as a form of "reversed teaching". This was supported by survey findings that asserted the instructors' failure to facilitate students' networking and collaboration. This key finding supports the 'flipped learning primer', which suggests that different flipping models exist on a continuum and instructors move along this continuum and use different models based on their objectives and goals [84]. The most basic model of the FC continuum starts with reverse teaching, followed by flipped learning, which may extend to flipped mastery or gamification [84]. In flipped learning, collaboration may facilitate the achievement of higher-order thinking skills. Still, time constraints cannot be excluded as it may have been one of the limitations of the current study. It is not clear whether instructors were not aware of the principle, not convinced of its validity, or did not have enough time to implement it. It is important here to highlight that the main objective of this study was not to judge the instructors or to claim that some of Moore's [84] flipping models are better than others but to investigate how instructors new to flipping perceived the FC by checking their awareness of its underlying requirements and pedagogy.

Students' compliance was another big challenge reported by instructors and might have been one of the reasons that made them rethink the FC recurrent implementation. As the current study focused only on the instructors' perceptions, it was not clear from the data collected why students did not take the FC tasks seriously. Following up on the challenges mentioned by the instructors in relation to the students might be one of the limitations of this study. Moreover, instructors' real practices were not registered because classroom observation was not one of the study tools. However, this limitation has not affected the essential targeted aim of the current study, yet it opens the door for future research that might investigate both instructors' and students' perspectives and offer suggestions to overcome challenges.

The findings also revealed that the majority of instructors received few professional development workshops on the FC, which in turn encouraged them to try it out. However, there are no data available on the content of these training workshops. It is not clear whether these workshops focused mainly on the theories behind the FC or went further into its implementation. This issue is very important as it will clarify if instructors' transition into the FC was based on the experiences they gained during these workshops or was just based on their intuitive beliefs. An evaluative study of this type of workshop is recommended in order to identify the instructors' actual needs to be able to smoothly and successfully transit into the FC. In addition, most of the instructors were trained on flipping around the same time from workshops run by the university. Comparing this group with a more experienced group of instructors might highlight different issues compared to the ones in this paper. Therefore, future studies could explore how more experienced instructors conduct the FC.

Needless to say, the current study derived its data from participants who were from six different colleges; however, the effect of the discipline on instructors' perception of the FC was not clear. In spite of instructors' reporting that their decision of whether to flip depended on their mastery of the content, the subject matter, the student's competency level, and class size, they did not reveal in their self-reflection reports or during the interviews the impact of the discipline itself on their decision. Accordingly, future research could investigate the effect of instructors' majors on their decision to flip.

Another limitation of this study is that it focused on a small, private university in KSA, specifically the women's campus, with mostly social sciences disciplines. The limited number of participants was justified as the selection of the sampling technique was based on a convenient method. Future studies could examine how a larger scale of male and female participants might implement the FC, as there seem to be significant differences across male and female students' perceptions of online teaching during the pandemic [7]. Additionally, other universities—public and private—in the Kingdom of Saudi Arabia could be explored to identify any variations in their implementation of the FC.

Lastly, the paper revolved around self-reported information based on instructors' perceptions of the FC through interviews, surveys, and self-reflection reports. Future research could include examination of instructors' FC implementation such as observing classes and/or examining the kind of tasks, classroom discussions, videos, assessments, and other activities used in and out of class. These observations could provide more depth and understanding of the actual implementation of the FC.

6. Conclusions

This study examined the perceptions of female faculty members attempting to implement the FC in a Saudi higher educational context where teacher-centered pedagogies prevail. The objective of the study was to explore the readiness of instructors to make the shift from traditional teacher-centered classes to more active teaching approaches. It explored the instructors' awareness of the requirements of flipping and their perceptions of the workings of the newly implemented pedagogy. Simonson's [14] list of flipping prerequisites was used to investigate the instructors' perceptions of what is needed to make an effective flip and the theoretical framework Community of Inquiry (CoI) was used to

assess the degree of the instructors' awareness of the features and indicators of a successful flipped learning environment.

The findings emerging from this study represent a modest contribution to our understanding of the instructors' perceptions of the FC pedagogy. While most studies focused on the perceptions of students and instructors of the instructional benefits and challenges of this innovative approach, this study examined how instructors new to flipping perceived its requirements and its pedagogy. The objective was mainly to help instructors develop their practices to maximize the FC benefits and to ensure its continued use. The results revealed that the instructors demonstrated an awareness of most of the FC requirements, but they faced challenges in enhancing the students' collaborative learning skills. The instructors did not seem ready to engage in more student-centered active teaching approaches. Though they demonstrated an awareness of most of the requirements of flipping, when it came to actual practice, they failed to fully recognize the value of the presences and how they intersect to help achieve a successful flip. They exhibited more awareness of the learner, teaching, and cognitive presences; however, they did not invest in the social presence. This can be further enhanced by focusing more on student-to-student interaction through facilitating collaborative activities.

This study adds to the limited research that has investigated instructors' understanding of the FC requirements and pedagogy and recommends addressing these issues by offering instructors more training on the FC design and implementation. Instructors need to be guided on how to plan, reflect, and adapt their pedagogical strategies to gain maximum benefit from the FC pedagogy. However, what is more important is that the culture of student-centered teaching approaches need to be enhanced. Traditional teacher-centered approaches to teaching, which are predominant in the Saudi context, cannot be changed overnight, especially when students are used to it and demand it from instructors who find it easier to respond to students' needs. However, when students are trained gradually to take more and more responsibility for their learning, the transition to the use of more active and flexible teaching pedagogies such as the FC will take place.

Appendix A

Instructor Reflection (Sample 1)

Course: ENGL301 English Technical Writing

I have tried differentiated learning techniques in bite-sizes in multiple lessons. One memorable lesson with elements of the flipped classroom proved to be an interesting experience for both students and myself.

I teach technical writing to Engineering and Architecture students, and one semester, assessing the level of the students, I planned a few elements using the flipped technique. Since these students were training to be interior designers and architects, I chose two media articles on 'smart workplaces' and posted them on moodle. I embedded two video complementing contemporary workplaces. I informed students on whatsapp to watch the

videos and read the articles before coming to class. As a precautionary measure, I posted the same material on the whatsapp group too.

While in class, I gave 'the last-minute readers' 5–10 min to browse the material and for the rest of the class, posted questions on slides for discussion and review of the material.

The centre of that lesson was the students' participation in the graded activity, ranging from ideas for smart offices to focus on technical terminology. I was amazed at the interest and knowledge level of these students when discussing the façade, circulation and renders for smart buildings.

After activating their schema, I introduced the task-at-hand which was to write a technical email to their manager suggesting smarter solutions for workplace problems. Armed with the knowledge of how smart places work, the student groups came up with novel yet practical solutions in their email.

Students enjoyed the freedom of working in groups and watching videos, and I achieved the goal of introducing technical writing to them. Most students, I figured, had not read the long articles but the videos captured the same ideas, so the goal of information sharing was achieved. Students with weak language skills took a different role while composing the email with their group members. I received authentic emails from all groups suggesting improvements in a workplace. I replied to each email giving further comments and suggestions. As a token of appreciation, I posted all emails on the pin-board in class, for all groups to read and share.
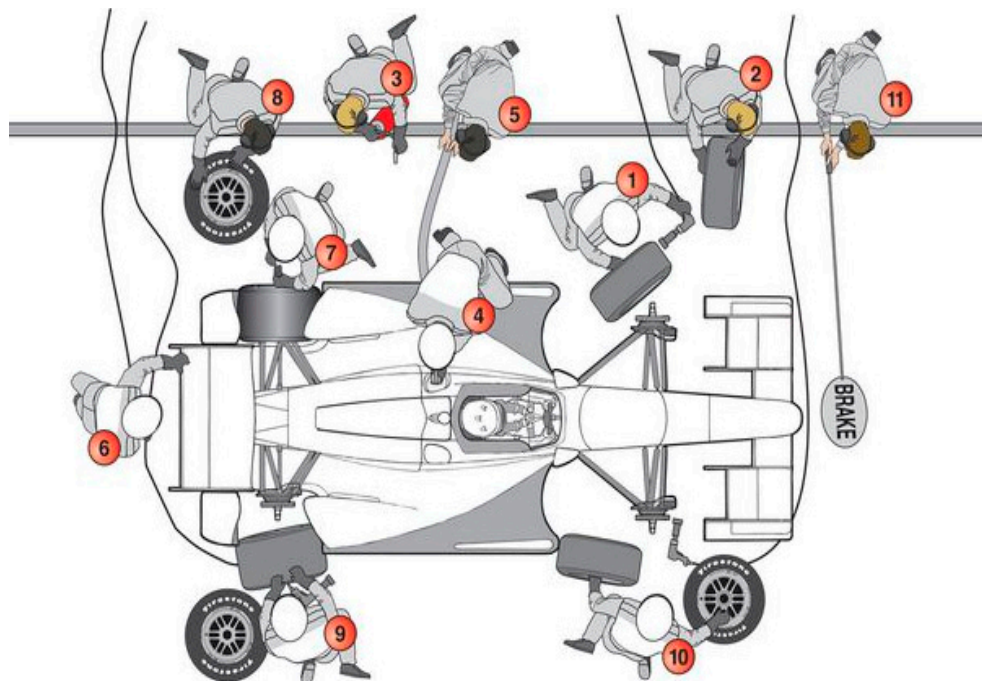
Thank you for reading my thoughts . . . .

Appendix B

Instructor Reflection (Sample 2)

Course: ACC101 Introduction to Financial Accounting
Activity: Pit-Stop Challenge

I have had an opportunity to conduct a very exciting game to replace my ordinary tutorial session for the above course. The arrangement of the game is as follows:

There were five tables that I used as 'pit stops'.

Each table was attached with a set of ten problem solving questions. These sets of questions covers different topics in the chapter. They cannot be removed from the assigned tables.

Next, students were divided into five groups (each group came with five members).

Each group was stationed at each pit stop.

I had a whistle with me. When I blew the whistle, the group started to solve the questions that they have at the table. They were given five minutes to solve as many questions as they can.

After five minutes, I blew the whistle again.

All groups will have to move on to the next pit stop and solve the questions set at that table. Again, five minutes were given at each pit stop.

The process was repeated until each group had the opportunity to solve the questions from all pit stops (completed the cycle).

At the end of the session, peer marking took place to check each group's answers. I explained the correct answers as we skimmed through the questions.

The session intended to change the common landscape of conducting tutorial in classrooms. I changed the environment setting to give students a 'fresh view' of the tutorial sessions. There were two main objectives of conducting this activity:

(a) To encourage student participation and to increase level of engagement: Students unconsciously participated on their own will when they perceived the five-minute time restriction as a competition that they have to win.

(b) To embed and enhance the skills much needed in students: teamwork, leadership, analytical thinking, time management and positive attitude.

This activity is best carried out to introduce lessons categorized in the level of difficulty as either medium or hard. The activity provides an opportunity for brainstorming session to solve the problems amongst group members. It also promotes a more 'serious behaviour' to ensure the problem is solved by the end of the session.

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