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# Teachers' Perceptions of Using the Flipped Classroom Model in Inclusive High Schools

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Abstract

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MAT, Walden University, 2013

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Dissertation Submitted in Partial Fulfillment

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## Abstract

The flipped classroom model is expanding rapidly in school districts across the United States and abroad. In a flipped classroom, students complete hands-on collaborative activities in class and watch instructional videos at home. This relatively new method has been tentatively linked to improved learning outcomes, especially for struggling students. However, there is limited literature on how teachers perceive the flipped classroom in inclusive settings. The purpose of this study was to fill that gap by exploring high school teachers' perceptions to better understand how the flipped classroom model supports students in inclusive settings. The framework for this study was the concerns-based adoption model. The research design for this study was the basic qualitative design. The in-depth interview was used to investigate the perceptions of 11 high school teachers who used flipped classroom techniques in inclusive environments. Participants were from the United States of America, Australia, Canada, the UK, and Peru The thematic inductive technique was used to analyze data. Results indicated that although some students with disabilities struggled to focus, their teachers still found the flipped model effective. Teachers implemented accommodations to support those students. Results also indicated that teachers switched their roles, placing students at the center of their learning. At the students' level, the flipped model gave them more responsibilities. This study contributed to social change by providing qualitative evidence for decision-makers and stakeholders to help them consider using the flipped model in inclusive settings. Future researchers may focus on obstacles related to the implementation of the flipped model.

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# Dedication

This dissertation is dedicated to my wife, Angeline Ouabo, and all my children; they gave me their unconditional support during my Ph.D. journey.

## Acknowledgments

The completion of the Ph.D. for me was a complex process. It required sacrifices in money, time, and friendship. I express my heartfelt gratitude to all those who supported me in one way or another during my journey for the Ph.D. I am particularly grateful to Dr. Carla Lane, the chair of my dissertation, and Dr. Christopher Rasmussen, my methodologist. Without those dissertation committee members, I could not complete this study; they guided me during the whole process and motivated me when I was about to give up. I would also like to thank all my classmates who shared with me their successful strategies. Finally, I would like to thank Ms. Kim Burton, the liaison librarian to the Walden University College of Education, who supported me tirelessly.

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# Chapter 1: Introduction to the Study

Emerging technologies often drive innovation in education (Unal & Unal, 2017). O'Flaherty and Phillips (2015) described the flipped classroom as an instructional model that allows teachers to record lectures through multimedia for students to review at their pace; it places those students at the center of the instruction. In the flipped classroom model, students watch instructional videos at home, complete their homework in the classroom, and receive individualized instructions. The flipped classroom model is an example of this kind of technology-driven innovation. It includes the use of technology to transform classwork into homework (Fautch, 2015). By switching the location of core instruction from inside the classroom to outside it, the model frees class time to be used for problem-solving and engaging activities (Fautch, 2015). This allows students to learn in individual settings rather than group settings, which affords a host of benefits and can lead to higher-quality instruction (Hamdan et al., 2013). The flipped classroom boosts students' learning (Ihm et al., 2017). In-class activities are designed to promote active (Delozier & Rhodes, 2016) and in-depth learning, and may include experiments, discussions, and projects (Project Tomorrow & Flipped Learning Network, 2014). He et al. (2019) found that with the flipped classroom, there is a change in the workload, which frees more learning time for students.

Researchers have suggested that students learn more in flipped classrooms, not because of the technological components involved in accessing content outside the classroom, but because the structure of the model allows teachers to use other effective pedagogical strategies. Specifically, the flipped classroom model (a) provides students with numerous opportunities to engage in active learning (Jensen et al., 2015) and higher-

order thinking, (b) supports the increase of interaction between students and teachers (Chen, 2016), and (c) allows for more personalized (Gough et al., 2017) and autonomous learning (Bergmann & Sams, 2012). Bergmann and Sams (2012) are considered the pioneers of the flipped classroom movement.

The model supports these learning modalities and styles in a variety of ways. Bergmann and Sams (2012) gave a helpful overview. They noted that students could watch at-home instructional videos, which replace traditional in-class lectures, as many times as they needed to understand the material fully, including rewinding, re-watching examples and demonstrations, and so on. Students could stop the instructional video at any time to control the speed at which they are encountering or moving through the material upon its initial presentation. In this way, they could adjust the speed of the lecture according to the speed at which they take notes and comprehend new ideas (Bergmann & Sams, 2012). Because in-class time is spent helping students who did not understand the material presented in the instructional videos, students who needed the most help were the ones who received it, while those who needed less help were able to work autonomously or collaboratively to advance their engagement with the content (Bergmann & Sams, 2012). In flipped classrooms where teachers allowed students to advance through the curriculum at their own pace, students directed the speed of their learning to match their interests and capabilities. Together, these advantages created an environment that was supportive of students who need the most help; although all students in the flipped classrooms benefited from opportunities for autonomous learning, struggling students in particular gained access to the instructor's time and attention that they needed (Bergmann & Sams, 2012).

Other authors have studied the flipped classroom including Akcayir and Akcayir (2018), who indicated that the flipped classroom enhanced students' abilities to learn, as well as increasing their satisfaction with the learning experience. It improved students' creativity, confidence, and problem-solving skills. Similarly, He et al. (2016) argued that the flipped classroom was flexible because it allowed students to learn when and where they wanted, and Sahin et al. (2015) observed that it was often easier for many students to watch videos than it was for them to read comparable books.

This research was a clear and close match for the research goals of the Learning, Instruction, and Innovation program at Walden University. The focus of the present study was on the exploration of high school teachers' perceptions of understanding how the flipped classroom model supported students in inclusive settings. Because the flipped classroom is an instructional and pedagogical model intended for implementation in educational settings to promote improved student outcomes through active learning and higher-order thinking (Delozier & Rhodes, 2016; Flipped Classroom Network, 2014; Gough et al., 2017; Jensen et al., 2015), investigation of the model's implementation met the learning and instruction components of the program's goals and educational remit. More than this, although applications of the model were appearing with increasing frequency across the nation (Fautch, 2015; Hermanns et al., 2015; Kostaris et al., 2017; Petrovici & Nemeşu, 2015), many scholars still considered it a new approach in teaching (Chen, 2016; Clark, 2015; Gilboy et al., 2015; Love et al., 2014; Jensen et al., 2015; Schmidt & Ralph, 2016). It was, therefore, reasonable to describe the study of the flipped classroom model as innovative and suitable to fit the Learning, Instruction, and Innovation program.

A second reason to regard the flipped classroom model as innovative is that it incorporates novel uses of technology in the educational sphere, relying on at-home video access as a means of providing core content knowledge outside the classroom. According to the stated intentions of the model's adherents, this use of technology was designed to support teachers in enhancing the types and levels of learning to which students are exposed in the classroom (Kim et al., 2014; Strayer, 2012). It was also intended to help them create meaningful lessons and provide purposeful instruction by changing the format and conditions under which that instruction is offered (Findlay-Thompson & Mombourquette, 2014; Flipped Classroom Network, 2014).

The structure of this initial chapter will proceed with the background of the study, problem statement, purpose of the study, research questions, conceptual framework, nature of the study, definition, assumptions, scope and delimitations, limitations, significance, and summary.

## Background

Hao (2016) indicated that the flipped classroom is a teaching technique where the instruction strategy is reversed. This background section provides information about the history of the flipped classroom model and teachers' perceptions of using that model to support students. Gross et al. (2015) found that teachers at West Point assigned video materials to students to complete at home and used the class time to boost the instruction; this was evidence that previous authors pioneered what is now called the flipped classroom. Bergman and Sams (2012), two high school teachers, used the flipped classroom model in 2007 after observing that students were missing instruction to participate in sports activities. The teachers started recording their instructions and made

them available to students. Students could watch the recorded video several times. Other authors explored teachers' perceptions about the flipped classroom. The work of those authors was used as the background for the present study. The first of these studies was a quasi-experimental investigation conducted by Unal and Unal (2017), in which they collected data from 16 public school teachers enrolled in a graduate course. Their data collection included the administration of pretests, posttests, and a descriptive survey, all of which were intended to help them determine how using the flipped classroom model influenced student performance, how students perceived the flipped classroom model, and how satisfied teachers were after implementing the model in their classrooms. Results indicated that students in flipped classrooms had positive attitudes toward the model and had higher achievement scores following the trial period. Also, teacher satisfaction was improved on average after they implemented the model. This evidence helped demonstrate the potential value of the model as both a pedagogical tool and a means of increasing teacher engagement and thereby provides initial justification for the current study.

Gough et al. (2017) conducted another important qualitative study in which they used a survey to collect data from 44 teachers. They intended to explore teachers' perceptions of the flipped classroom model and to determine whether their perceptions differed according to the grade level or content area. Their findings indicated that teachers perceived the flipped classroom model as possessing three benefits. These were that it (a) provided opportunities for student collaboration, active learning, as well as higher-order thinking; (b) was beneficial for absent and struggling students; and (c) increased parental involvement in learning processes. However, teachers indicated that

access to technology was a key barrier to implementing the model, as it is almost completely dependent on each student having at-home video streaming technology and reliable internet access. This study helped to close the gap in the literature by examining the perceptions of teachers concerning the flipped classroom model in inclusive settings. Further, it established the model's potential utility. Gough et al. provided additional justification for the present study, which extended similar questions about perceptions of advantages and barriers beyond the realm of general education to students with disabilities, while simultaneously employing a more in-depth research method (structured interviews rather than a survey) to better understand the details of teachers' beliefs and attitudes. This study was among limited research dealing with the flipped classroom model in inclusive settings and therefore helped to gain an understanding of the concept.

There were three other studies to consider. The first was a mixed-method study conducted by Chen (2016) among 64 ninth-grade health education students. Chen used test scores, in-person observations, and interviews to examine how the flipped classroom concept influenced the performance of students. Chen identified several key barriers to the model's successful deployment, including the potential for technology malfunction, initial student resistance to the unfamiliar practices, and the challenge of locating or developing instructional materials for expanded in-class interactions. Chen also reported that students did eventually prefer the flipped classroom model once they set aside their initial resistance and that teachers reported improved levels of student discussion and interaction. Although no significant differences in student performance were found, scores on three tests given during the trial period were 2.33% higher for students in the flipped classroom setting. This evidence, while somewhat preliminary, indicated that the

model might improve outcomes such as standardized test scores. This research warranted further investigation of its ability to help students with disabilities, who were among the group the model was developed to help (see Chapter 2).

This final point concerning the model's utility for assisting students who needed more in-person attention was supported by other work. Leo and Puzio (2016) collected data from ninth-grade biology students using pretests, posttests, and quiz results to examine the impact of the flipped classroom concept on students' achievement. Results indicated that students in flipped classrooms demonstrated improved educational outcomes when compared to other students in traditional classroom settings. Students also preferred receiving the instruction outside of their classroom and appreciated the increased opportunities for active learning afforded by the new pedagogical structure. Similarly, Bhagat et al. (2016) collected data from 82 high school students in Taiwan and compared the effects of a flipped classroom intervention to the effects of a standard classroom environment on mathematical test scores. They found that average and low achievers showed marked improvement in the flipped classroom setting, while high achievers did not. However, the model did increase motivation for all students, as measured by attention, perceived relevance, confidence, and satisfaction. Both core findings imply that the model was likely to be well-suited to assisting children with disabilities, which was investigated by the current study.

Although the studies above focused on how the flipped classroom model supports students, they correlated with teachers' perceptions concerning that model because teachers were key components of the instruction. Gough et al. (2017) researched K-12 teachers using the flipped classroom in Southwest and South-Central Minnesota. The

outcome indicated that teachers perceived the flipped classroom as a model that generates more time for individualized instruction, helped to challenge students, and increased their interaction with their teachers. Similarly, Rachmawati et al. (2019) examined the perception of teachers using the flipped classroom in mathematics instruction; they found that teachers view the flipped classroom as a model that motivates students to learn and increases critical thinking and problem-solving skills. Bhagat et al. (2016) also demonstrated that the flipped classroom model has been found to be effective outside the United States. This evidence helped give the flipped classroom model legitimacy as an established and globally accepted approach and lends further support to the need for additional research on the model's efficacy in new settings, such as inclusive learning environments.

## Problem Statement

The problem addressed in this qualitative research is that we do not know what high school teachers' perceptions are about the flipped classroom in inclusive settings. There was a significant and notable lack of research addressing the efficacy of the flipped classroom model in inclusive high school settings. With this study, I aimed to help remedy that lack of research by collecting in-depth, well-structured interview data cataloging teachers' perceptions about how the model functions in inclusive high school settings. Limited empirical work exists supporting the claim that the flipped classroom model was an effective strategy for improving student learning (Delozier & Rhodes, 2016; Hamdan et al., 2013; Unal & Unal, 2017). As mentioned in the previous sections, some studies (primarily conducted in the United States) do provide evidence that the flipped classroom model could help improve student learning at the high school level

(Chen, 2016; Leo & Puzio, 2016; Unal & Unal, 2017). However, much of the literature attesting the model's efficacy for improving educational outcomes dealt exclusively with college students (Cummins-Sebree & White, 2014; Munson & Pierce, 2015; Newman et al., 2016; Yildirim, 2017) or high school students outside of the United States (Bhagat et al., 2016; Olakanmi, 2017).

Although theoretical and design considerations support the view that struggling students were likely to gain the most benefit from the flipped classroom model (Bergmann & Sams, 2012), literature addressing the use of the model in inclusive settings is sparse (Altemueller & Lindquist, 2017). The challenges involved in implementing the flipped classroom with students with disabilities have not been well-explored (Smith & Basham, 2014). The shortage of research related to the use of that instructional model for learners with disabilities justified this study.

These research gaps had potential consequences; at the very least, they restricted educators' ability to make well-informed decisions about the use of the model and how they might best assist teachers and students in trying to create healthy, effective inclusive learning environments. At present, educators are implementing the flipped classroom model without fully understanding the potential value and potential detriments of doing so. The information generated by the present study about how teachers experienced in using the flipped classroom perceive the model's efficacy and outcomes might be invaluable to these individuals and enable them to reach better-supported and more confident conclusions about what course of action to pursue, and how best to allocate public resources.

## Purpose of the Study

The purpose of this qualitative study was to examine high school teachers' perceptions of the flipped teaching classroom model within an inclusive classroom. Precisely, this study helped to understand how the flipped classroom model supports students with disabilities working alongside their peers without disabilities. Many students struggle in traditionally organized (i.e., un-flipped) classrooms for a variety of reasons. These included attention difficulties, behavioral problems, and other challenges that may be mitigated by more active, participatory classroom activities. Because teachers were responsible for implementing the flipped classroom model, research about using the flipped classroom model in inclusive high school settings from the perspective of teachers is a logical choice.

## Research Questions

One overarching research question was developed to guide the study. Two sub-questions were designed to break the larger issues into tractable queries with the potential for direct evidence-based answers, which might then inform broader conclusions concerning the primary question. The sub-questions were intended to support the exploration of the topic and to promote the generation of rich data that helped to fill the gap in the literature. These questions directly reflect six components of the concerns-based adoption model (CBAM), which is explained in detail in Chapter 2. The research questions are:

RQ 1. What are teachers' perceptions regarding the use of the flipped classroom model in inclusive high school settings?

RQ A. How well informed are teachers about the appropriate and effective use of the flipped classroom model in inclusive settings?

RQ B. What are teachers' perceptions about implementing and managing a flipped classroom in inclusive settings?

## Conceptual Framework

The conceptual framework for this qualitative research study was the CBAM. CBAM is a framework created by Hall and Hord (1987) to understand and manage how people change. The CBAM is used to understand how people react to a change. CBAM helps to know how teachers change practice. That framework is mostly used to explore the perception of people when a new concept is implemented. CBAM was suitable for this study because it improved my understanding of how high school teachers in an inclusive setting perceived the relatively new concept, the flipped classroom. The CBAM was used to generate the research question and sub-questions.

Trapani and Annunziato (2018) agreed that CBAM is a suitable conceptual framework when the study deals with change. Masarweh (2019) mentioned that the CBAM focused on three main concepts:

- Stages of concerns: it helps to understand the feeling and concerns of people about a change
- The level of use: it indicates what teachers know and how they behave with the use of technology
- Innovation configuration: it explains how technology is used in education.

The CBAM is mostly used to explain teachers' concerns when there is a change in education. This conceptual framework will be detailed in Chapter 2.

## Nature of the Study

This study adopted a generic qualitative design, also known as basic qualitative design, avoiding the narrower and more specific design options outlined in Chapter 3 in favor of an open-ended investigative approach. Generic qualitative studies are useful when researchers seek to understand a complex situation or phenomenon in its entirety, and especially when there is a heavy emphasis on lived experience (Kahlke, 2014; Merriam & Tisdell, 2016). Typically, generic qualitative studies focus on real-world problems (Percy et al., 2015) and are used when researchers do not wish to conduct theory-based, case-study-based, narrative, ethnographic, or phenomenological research (Caelli et al., 2003; Kahlke, 2014).

The generic qualitative design is well suited to studying phenomena situated in educational settings (Merriam & Tisdell, 2016). In addition to this general suitability, the design choice was appropriate because the purpose of the present study was to generate data that would broaden the general understanding of a complex and multi-faceted phenomenon, i.e., teachers' perceptions regarding the implementation of the flipped classroom model in inclusive settings. The generic qualitative research did not fall into a specific methodological group. This basic qualitative design was used to explore high school teachers' perceptions about using the flipped classroom in an inclusive setting. The inclusive setting meant students without disabilities work alongside their peers with disabilities; otherwise, the focus of the research was on understanding how the flipped classroom supports students with disabilities working in the same setting with other students without disabilities.

Data were collected to have a clear understanding of high school teachers' perceptions about using the flipped classroom model in an inclusive setting. The study participants were 11 high school teachers implementing the flipped classroom design in a setting composed of both students with disabilities and students without disabilities. The data were collected through phone interviews and analyzed with tools such as Dedoose.

## Definitions

*Flipped classroom*: Activities that are traditionally completed in class are now done at home, while activities that are traditionally done as homework are now completed in class. In both instances, the materials and activities must be adapted and re-designed to accommodate the modified circumstances, but the principle holds true: lecture-type content is learned at home via video technology since interactive and participatory learning takes place in the classroom (Bergmann & Sams, 2012).

*Inclusive classroom*: A general education classroom in which students with disabilities and nondisabled students are integrated into the same space and participate in the same activities. This allows students with disabilities to receive equitable educational opportunities (Obiakor et al., 2012).

## Assumptions

Several core assumptions guided this study. The first was that all or most of the teachers invited to take part in the study were available and willing to participate and that they would share their perspectives fully and honestly. The second was that regional decision-makers, including administrators and teachers, would use the outcomes of the study to improve the educational experiences they offered to their students by adjusting how they employed the flipped classroom model. Finally, it was assumed that all teachers

involved in the project were familiar with the use of the flipped classroom model in inclusive settings.

These assumptions were necessary both because they make it easier to anticipate certain obstacles to the collection of data and because they presented a background against which to evaluate participants' knowledge of the implementation of the flipped classroom model. Finally, they defined the study's goals concerning the social impact and social change.

## Scope and Delimitations

### Scope of the Study

The uniqueness of the present study's research questions and knowledge-generation aspirations was related to inclusion; the results were most valuable in that they contributed to existing knowledge of how the flipped classroom model affected inclusive education. The rationale of this focus was to understand how the flipped classroom model benefited all students and to address the lack of research on the model's efficacy in meeting the needs of students living with disabilities.

### Delimitation of the Study

The foundational data source for the present study was the expertise of 11 high school teachers currently using the flipped classroom model across American school districts and abroad. Participants were all teachers who had used the flipped classroom in inclusive settings.

With respect to the transferability of the results, it was expected that suitable design considerations and data collection practices (as outlined in Chapter 3) would enable the study's findings to be relevant to similar classrooms across the country and

abroad. The precise results were not transferable, but they served to highlight potential areas of concern and to direct attention to likely issues and likely benefits.

## Limitations

The first limitation of this study was that the interview-based methodology admitted the possibility of restricted scope and the possibility of bias. Concerning the first of these, lengthy interviews were sufficiently time-consuming as to limit the number of participants, because I needed time to set up questions and then transcribe and analyze answers. Also, interviews could yield biased conclusions if the interviewer was too familiar with the interviewee; to limit or avoid that issue, I did not belong to the group being interviewed and fixed a time frame to interview so that I did not have time or opportunity to build a friendship with the interviewee. The second limitation of the study was that the outcome of the research was not fully generalizable, given its relatively limited scope.

## Significance

The study's results contributed to the development of successful praxis in the area of flipped and inclusive learning. The findings it produced are valuable for making informed decisions about how the instructional model can best be used. Because the flipped classroom model (a) provides opportunities to engage in active learning (Jensen et al., 2015) and higher-order thinking, (b) supports increased student-teacher interaction (Chen, 2016), and (c) allows for more personalized (Gough et al., 2017) and autonomous learning (Bergmann & Sams, 2012), the potential for social change through improved learning outcomes for students in inclusive flipped classroom settings is considerable.

The study helped to fill a gap in the literature pertaining to the implementation of the flipped classroom in inclusive settings. Researchers studying the flipped classroom model have consistently called for more research addressing its potential benefits and obstacles to its implementation (Altemueller & Lindquist, 2017; Delozier & Rhodes, 2016; Hamdan et al., 2013; Jensen et al., 2015; Leo & Puzio, 2016; Munson & Pierce, 2015; Newman et al., 2016; Olakanmi, 2017; Unal & Unal, 2017; Yildirim, 2017). Altemueller and Lindquist (2017), in particular, noted the lack of research on how the model affects inclusive learning environments.

## Summary

This research concerned a generic qualitative study focused on teachers' perceptions of the flipped classroom model in inclusive high school settings. It might contribute to decision-making and educational practice in this domain. The study involved 11 teachers with at least 1 year of experience in the target conditions and employed structured interviews to collect and collate their beliefs, attitudes, and impressions.

The next chapter reviews the relevant literature, presenting what was already known about the flipped classroom model and its effects.

# Chapter 2: Literature Review

This study explored high school teachers' perceptions to understand how the flipped classroom model supports students in inclusive settings. The present chapter examines the literature on the topic, covering the fundamentals of the issue along with the study's theoretical and conceptual background and previous empirical work on flipped classrooms and instructor attitudes and perceptions. First, the scope of the study will be briefly restated to frame the literature-based discussion that follows.

Developing a clear understanding of how teachers view the flipped classroom model will help to determine how efficient that model is in achieving its pedagogical goals. The purpose of this study was to explore high school teachers' perceptions to understand how the flipped classroom model supports students in inclusive settings. The main research question is: what are teachers' perceptions regarding the implementation of the flipped classroom model in inclusive high school settings? The two sub-questions are:

RQ A. How well informed are teachers about the appropriate and effective use of the flipped classroom model in inclusive settings?

RQ B. What are teachers' perceptions about implementing and managing a flipped classroom in inclusive settings?

Because all of the above concerns are explored in this study, especially in inclusive high school settings, this literature review will cover a larger area of related research, drawing on technology studies, educational theory, and psychology. The chapter's outline is as follows. Its first section will briefly explain the literature search strategy that was adopted here and lay out background considerations related to the study's qualitative methodology. Its second section will describe the project's conceptual

framework and the CBAM, and the third will focus on the literature review related to key variables and/or concepts.

## Literature Search Strategy

In accordance with Walden University's research guidelines, peer-reviewed articles were collected from several scholarly databases and search tools relevant to education, including ERIC, ProQuest, PsycArticles, Sage Premier Academic Search Complete, Computers, and Applied Sciences, Education Source, PsycINFO, and SocINDEX. All databases were accessed using Walden University Library resources. Search strategies used included the use of reference lists from seminal and key pieces of research as well as systematic keyword searches and exploration of subject term trees that employed databases' thesaurus tools. Among the keywords and search terms employed were the following: flipped learning, flipped classroom, blended learning, flipped teaching, inverted classrooms, hybrid learning, special education, disabilit*, special needs, inclus*, least restrictive environment, high school, and secondary. All articles were reviewed for topical and methodological relevance.

## Conceptual Framework

The conceptual framework for this study is the CBAM, which is a theoretical perspective on the implementation or introduction of new technologies, techniques, or systems into existing organizational structures. Its primary focus is on the needs, ideas, and experiences (the concerns) of the people involved, rather than on outcome measures or some other aspect of the process. Hall and Hord (1987) defined *concern* as "the composite representation of the feelings, preoccupation, thought, and consideration given to a particular issue or task" that progresses and ranges in intensity through the process

(p. 58). Concerns are not necessarily fears, anxieties, or worries; the term is far broader than that, and the goal of the approach is not to address worries but rather to understand how new systems are perceived and how that perception affects their use and consequences (Hall & Hord, 2011). This section will present the CBAM, examining the model's historical roots and how it has historically been used, the core concepts behind it, the benefits it typically affords to investigations of this kind, its limitations, and how it supports the present study.

**Origins and Historical Uses of the CBAM**

The CBAM was created in the 1970s and was influenced heavily by the work of Frances Fuller (Newhouse, 2001). Fuller (1969) initiated a line of research oriented toward the identification of teachers' concerns about themselves and their students. Her findings indicated that preservice teachers typically have more concerns about themselves and their performance, whereas in-service teachers report more concerns about their students. These findings were then replicated and expanded by other researchers building on her results.

Perhaps most importantly, a team at the University of Texas at Austin's Research and Development Center for Teacher Education developed the foundations of the contemporary CBAM model in a seminal study in the 2000s. The authors found that a school's principal plays a crucial role in the process of adopting any new system or practice (Hord et al. 2006). Since then, various authors have used the CBAM as the framework for research into institutional change and adoption. For instance, Min (2017) used the CBAM to examine how teachers included eBooks in their curriculums, reporting that the use of the CBAM does not completely enable the resolution of concerns when

teachers have taken on innovation without outside support. Another example is provided by Lochner et al. (2015), who used CBAM to describe the concerns of U.S. secondary school teachers during the adoption of learning management systems. They found that teachers' primary concerns in that context were focused on awareness, management, personal issues, and informational issues.

**Core Concepts in the CBAM**

The CBAM is a relatively comprehensive theoretical model of institutional change related to the adoption of new technologies, practices, or ideas. The model has three primary purposes: to explain the process of change, how people react to change, and how to make sure that the change is implemented successfully. CBAM is mostly used in the context of educational change, where it helps to identify the degree of comfort felt by teachers and staff about the implementation of a new process. According to Sultana (2015), the CBAM is used to support change in education. The model is widely used and enjoys a reputation as a reliable means of identifying key elements of systemic educational change, thanks to its focus on the concerns of individual participants.

Although the CBAM has been used for many decades, its foundations have not changed. The model's central idea is that an individual's concerns affect how that individual behaves, including how well they can function and what they are likely to do. For this reason, change only occurs when people's concerns are identified and addressed, allowing or enabling them to enact change (Slough & Chamblee, 2007). In an educational context, this usually means teachers. The CBAM thus focuses on identifying educator concerns relative to the introduction of innovations like new systems or programs and assesses how severe those concerns are. The CBAM operationalizes that as a theoretical

model using six key assumptions, each of which is a specific conceptualization of one of the relevant issues.

1. “Change is a process, not an event”: it does not happen overnight and requires many gradual shifts and iterative advancements.
2. “Individuals accomplish change”: change happens only when everyone takes part in the new way of doing things.
3. “Change is a highly personal experience”: individuals perceive change differently. Some people learn new ideas or adopt new methods faster than others.
4. “Change involves developmental growth”: as institutional change takes place it necessarily expands the knowledge and experiences of those involved.
5. “Change is best understood in operational terms”: change is not a question only of instruction or of outcomes, but of myriad material, psychological, and behavioral factors. This means that facilitators can best limit resistance to change by working to understand how it affects those who are involved and reduces unpleasant effects while emphasizing positive ones.
6. “The focus of facilitation should be on individuals” involved, on innovative responses to challenges, and the details of the context in which the change takes place. Change is accomplished through people modifying their behavior, not by ensuring that they have access to the required material (Hord et al., 2006, p. 5-6).

The American Institutes for Research (2015a) defined three dimensions of the CBAM: the innovation configuration map, levels of use, and stages of concern (see Table

1). These three dimensions are used to evaluate the process of change and whether and how it has achieved success.

**Table 1**

*The Three Dimensions of the Concerns-Based Adoption Model*

| Dimension name | Description |
|---|---|
| Innovation configuration map | Outlines the new program |
| Level of use | Explains how the personnel implements the new project |
| Stages of concern | Determines the viewpoint and beliefs of the staff about the new project |

*Note.* From "Concerns-Based Adoption Model (CBAM)," by American Institutes for Research, 2015a.

Within the CBAM, the innovation in question is viewed as a new practice. The CBAM's dimensions each deal with one aspect of the practice. The innovation configuration map helps to conceptualize or model it, the levels of use help to systematically describe how thoroughly the practice has been integrated into behavior, and the stages of concern describe participants' response to the practice.

Beginning with the last of these, the stages of concern more specifically are used to schematize concerns about the innovation held by the people responsible for acting on it or performing it within the organization. These concerns are categorized into seven stages of severity (American Institutes for Research, 2015b), each of which involves a distinct psychological attitude a participant might have toward to ongoing process of change. The stages of concern can best be understood as divided into three groups (Table

2). Each group is characterized by a focus on a different aspect of the educator's relationship to the innovation.

At Stage 0, the participant is not concerned about innovation. Once the participant is at Stage 1, they would like to know more about innovation. At Stage 2, the participant would like to know how innovation will affect them. Stage 3 is related to management. The faculty member would like to know how long it will take to implement innovation. Once participants reach Stage 4 and above, they are focused on impacts (see Table 2). Stage 4 concerns consequence: the participant would like to know how innovation will impact students. Stage 5 is about collaboration: the participant would like to know how innovation will involve or affect sharing ideas with others. Stage 6, the final stage, is about refocusing: the participant is looking for complete alternatives, and their main engagement with the innovation is to attempt to develop new ways of dealing with the issues it is intended to address.

**Table 2**

*Categories of the CBAM's Stages of Concern*

| Category | Stage | Description |
|---|---|---|
| Self | 0-Awareness | Faculty members at this stage show little concern about their engagement with the technology used. |
| | 1-Informational | Faculty members at this stage show more attentiveness for the use of educational technology, and they develop more interest in discovering further details about it. |
| | 2-Personal | Faculty members in this stage are found to be undecided about the needs of educational technology and their ability to address those demands and define their role about its use. The users found in this stage are generally analyzing and characterizing the relationship between using the educational technology and the reward structure of the organization to be able to define their responsibility in decision-making and personal commitment. |

| Category | Stage | Description |
|---|---|---|
| Task | 3-Management | Faculty members in this stage concentrate on methods and tasks related to using educational technology and the use of different information and engagement with different resources. Moreover, there is a clear reflection on effectiveness, categorizing, administrating, and scheduling. |
| Impact | 4-Consequence | Faculty members in this stage concentrate on the effect and influence of educational technology on student outcomes, performance, abilities, and the needed change for improvements. |
| | 5-Collaboration | Faculty members found in this stage are mainly concentrating on arranging and cooperating with other faculty members concerning the use of educational technology. |
| | 6-Refocusing | Faculty members found in this stage are mainly concerned with finding new routes and practices to have more benefits from the use of educational technology, with the chance of conducting major changes to the use of educational technology or substituting it with other alternatives. |

*Note.* Adapted from "Evaluating M-Learning System Adoption by Faculty members in Saudi Arabia using Concern Based Adoption Model (CBAM) Stages of Concern," by M. A. Masarweh, 2019, *International Journal of Emerging Technologies in Learning*, 14(5), 153-164. (https://doi.org/10.3991/ijet.v14i05.8296).

Complementing that typology of responses to innovation, the CBAM also provides a way to categorize participants' levels of use of the new practice. This dimension evaluates how people involved in the innovation are using it and what they know about it. American Institutes for Research (2015) lists eight distinct levels of use. Non-use is the first level: the educator is not using the program/process/innovation. Orientation is the second level: in the future, the educator may use innovation. Preparation is the third level: the educator is trained in the use of innovation and working to understand the materials. The fourth level is mechanical use: the educator uses innovation daily. Routine use is the fifth level: the educator is willing to use the

innovation with no change. The sixth level is refinement: the educator has evaluated the innovation and identified areas that need improvement. Integration is the seventh level: the educator is working to combine the innovation with their pre-existing behaviors. The eighth and last level is renewal: the educator continues to use the innovation but is thinking about moving on to a new practice, program, or system.

In essence, the level of use system is a way to quantify the most important part of the success of implementing a new concept. As most of the people involved reach higher levels, it is reasonable to describe the programs as having been implemented fully. The levels of innovation can be understood better by presenting the behaviors that are typical of each (see Table 3).

**Table 3**

*Typical Behaviors Characterizing the Levels of Use*

| Level of use | User behavior |
|---|---|
| 8 Renewal | Seeking more effective alternatives to the established use of the innovation |
| 7 Integration | Making deliberate efforts to coordinate with others in using the innovation |
| 6 Refinement | Making changes to improve outcomes of the innovation |
| 5 Routing | Making few or no changes and has an established pattern of use |
| 4 Mechanical Use | Implementation is poorly coordinated, changes to the innovation are user-oriented |
| 3 Preparation | Preparing to use the innovation |
| 2 Orientation | Seeking more information about the innovation |
| 1 Non-Use | Taking no action concerning the innovation |

*Note.* Adapted from "The Concerns-Based Adoption Model (CBAM): Series Paper (Number 2)" by S. Loucks, 1983, *The Technical Assistance Development Program.* (https://files.eric.ed.gov/fulltext/ED233524.pdf).

Using these two tools, a researcher (or administrator) using CBAM can monitor the rollout of a new program or plan using reliable, pre-formulated tools and take action along the way to address participants' concerns in order to make implementation go more smoothly.

## Benefits and Limitations of the CBAM

This section will address the CBAM's utility as an aid to research in the context of the current study, focusing on how it will facilitate the systematic recording and description of teacher attitudes and perceptions toward flipped classrooms.

### *Benefits of the CBAM*

The CBAM is considered "the most robust and empirically grounded theoretical model for the implementation of educational innovations" (Anderson, 1997, p. 331). Haines (2018) reports that CBAM was a useful guide for a team of academic advisors in helping them take a range of teacher attitudes into account when they were planning new developments to programs and initiatives (p. 64). Hall and Hord (2011) also acknowledge that the CBAM is well-grounded, and advocate its use in any educational setting. Sultana (2015, p. 154) makes an even stronger case, suggesting that CBAM is in many respects the global standard for the evaluation of changes that accompany educational innovation. Masarweh (2019) presented CBAM as a helpful tool used to understand how people behave when a new concept is implemented in the area of education.

### *Limitations of the CBAM*

Some authors criticized the CBAM. Anderson (1997) mentioned that the model was based on the assumption that teachers responded to a change when they were instructed to create it by outside authorities such as administrators. They suggested that

the model might not be as good a fit for teacher-driven voluntary changes, as it does not include ways of discussing how teachers respond to innovations developed without any external constraint. Masarweh (2018) mentioned that the CBAM levels of use do not fully account for attitudes, emotions, and feelings. Moreover, they do not assess the quality of the innovation under study, just how it is received. And while these two points are related, they are not identical; an initiative might generate poor outcomes while remaining popular. Other authors find that in some cases, it is simply too blunt an instrument. Kwok (2014) used CBAM and studied the implementation of a new curricula and found that teachers were very concerned at all stages of the application process—meaning that the model's two most important tools, its levels, and stages, were of little to no value except to indicate that the process was very difficult, which was not new information. The model is thus likely best suited to situations involving more mixed attitudes.

## Literature Review Related to Key Variables and Concepts

This section will deal with the flipped classroom model, the history of the flipped classroom, the pillars of the flipped classroom, barriers to implementing the flipped classroom, and the benefits of the classroom.

### History of the Flipped Classroom

Bergmann and Sams (2012) developed the first real version of what is now called the flipped classroom model, although they did not use that term. Strayer (2007) suggested the term *classroom flip* to describe the homework/class-time swap they were suggesting, and discussion of the *flipped classroom* seems to have evolved from there.

When they developed the concept in 2006, Bergmann and Sams both taught chemistry at Woodland Park High School in Colorado. They started planning their lessons together, and through their discussions, they noticed that some students were missing class sessions to attend athletic activities and were falling behind as a result. Seeking a means of assisting those students in getting access to the material they were missing, Bergman and Sams began using a software tool that allowed them to record class sessions as combinations of PowerPoint presentations, voice recordings, and annotations, turning all these elements together into a video that could be posted online. They used this tool to record lectures for their students and make them available online. Absent students were able to watch the recorded video to learn what that they missed, and other students were able to review videos covering material that they were not confident in or did not remember.

The method suggested by Bergmann and Sam (2012) gained attention. Teachers and students around the world started using the videos the two have posted online. The two then arrived at the second key piece of the model, which was the idea to have their students watch the videos as homework while using class time to interact directly with students who were struggling. Over time, Bergmann and Sams began training other teachers and formalized their system. They advocated a shift in the role of the educator: with the flipped classroom, teachers are no longer at the center of the instruction, instead functioning as facilitators.

Byron High School (Fulton, 2013) is an example of the implementation of the flipped classroom. The school made the change as part of its response to financial pressure. It lacked the funds needed to buy textbooks for students, and teachers were

being forced to create curricula independently. The flipped classroom model helped to address the problem by allowing students to watch videos rather than relying on textbooks as the primary vector of direct instruction, while class time can more easily be filled via teacher interaction (which does not require specialized instructional materials). Woodland Park High School is another example of the school where the flipped classroom is implemented; Bergmann and Sams (2012), the authors of the flipped model started that teaching model in that school.

**The Pillars of the Flipped Classroom**

The flipped classroom is based on four pillars, or four elements of a successful flipped classroom implementation (Flipped Learning Network, 2014). These pillars are a flexible environment, learning culture, intentional content, and professional educators (see Table 4). The first of these, the need for flexible environments, is based on the concept that the setting in which instruction takes place should be adjustable so that it can match the needs of the students. At the same time, the way that instruction is given and evaluated should be flexible as well. These two requirements are overlapping—for instance, the classroom must also be designed to make possible the instruction in small or large groups, allowing both forms of instruction.

**Table 4**

*The Four Pillars of the Flipped Classroom*

| Letter | Signified meaning |
|---|---|
| F | Flexible environment: students have the opportunity to select the time and setting of their learning. |
| L | Learning culture: students are at the center of the instruction; they have the responsibility for their learning. |
| I | Intentional content: the instructor chooses what to teach and the tools students should use independently. |
| P | Professional education: well-trained instructors work closely with students |

*Note.* Adapted from "The Four Pillars of Flipped Learning," by J. Yarbro et al., 2015. *The Edvocate.* (https://www.theedadvocate.org/the-four-pillars-of-flipped-learning)

The second pillar (Flipped Learning Network, 2014) is related to a change in how the instruction is delivered. The idea here is that change in education can be measured by the value of the instruction received outside of the classroom together with the accommodations made in the classroom to maximize learning based on that direct content. Creating a classroom where this is possible is creating a *learning culture*. This connects to the third pillar, which is intentional content. In a flipped classroom, the material being taught has to be designed differently. A portion of it must be moved out of the classroom, and this changes the role of teachers. Rather than being at the center of instruction, teachers are assisting students to drive their learning. Du Plessis (2020) described that concept as *learner-centered teaching*.

The fourth pillar is a reliance on professional educators. The flipped classroom model relies on the presence of good teachers able to engage with students in several ways. In many ways, the flipped classroom model emphasized direct student-teacher

interaction more than standard classrooms do, as these interactions are no longer simply serving to relay information but rather to coach, support, and facilitate. Thus, good teachers play an important role in education and cannot be substituted by virtual educators. Teachers may serve as a model for students and motivate them to be responsible for their education.

## Barriers to Implementing the Flipped Classroom

Because the flipped learning model is cost-effective, pedagogically progressive, and allows teachers to focus on student interaction, it is increasing in popularity. However, any attempted application of the model faces certain barriers, including access to technology, technology malfunction, student resistance, lack of suitable instructional material or resources for creating it, and accessibility of necessary information. These are discussed here.

### *Access to Technology*

Technology plays an important role in the education of students, and difficulties with its accessibility can affect learners' performance. This is, even more, the case when one's learning model is dependent on at-home access to online videos. Teachers perceive access to technology as a major barrier to implementing the flipped classroom (Gough et al., 2017). Students who cannot afford a computer or a tablet will not have access to the at-home content that is so important for their education unless the school provides the necessary devices or other resources. This is an active and ongoing problem: in many parts of the country, poor families do not have access to the necessary equipment (Bergmann & Waddell, 2012). Kashada et al. (2017) mentioned that unforeseen equipment problems can be an issue for the implementation of the flipped classroom.

They also indicated that students may lack motivation in learning if the materials are not interesting. Bowers and Kumar (2017) indicated that another issue in the implementation of the flipped classroom is students' resistance to technology. This continues to be a major barrier to using the model well.

### *Technology Malfunction*

A related problem is that of a technology malfunction. A device prepared for video streaming or some similar educational use may not work properly when it is needed. Chen (2016) found that students in the flipped classrooms sometimes were not able to load the instructional videos and therefore were unprepared for class the following day, resulting in wasted time and leaving them behind on key material. Perhaps the largest source of technology malfunctions, however, is internet reliability and access: students' home internet connections may fail while they are watching homework videos, causing the same problem just mentioned.

### *Student Resistance*

Because the flipped classroom represents such a complete reversal of how standard classrooms operate, they can sometimes produce student resistance, hindering the effective implementation of the model. When this happens, students simply are not willing to make the needed changes to their ways of behaving in class and completing homework; the shift feels too abrupt. Chen (2016) found that many students were initially resistant to the flipped learning model and disliked the requirement that they watch the instructional videos at home. When Herreid and Schiller (2013) polled science, technology, engineering, and mathematics teachers at the college level who use the case study teaching method in their flipped classrooms, they found similar behavior reported

widely across schools, districts, and subject areas. Students were initially resistant to the flipped classroom model because they did not like that their first exposure to new material occurred at home rather than in the classroom with a teacher and peer support (Herreid & Schiller, 2013). While the problem can be resolved as students become accustomed to the model, it still creates significant problems initially, as student resistance can result in a lack of student preparation for class (Chen, 2016; Herreid & Schiller, 2013). To reduce students' resistance, especially of the first-year experience, Tomas et al. (2019) In their research for higher education, suggested teacher-led instruction to help students with the transition.

### *Instructional Material*

It is not always easy for a teacher to find the material needed to translate an in-class lesson into a rich, instructive at-home video-guided experience. Chen (2016) found that teachers often could not find premade instructional videos covering the material they needed to teach, and so were forced to make the videos themselves. Because the videos must be effective in the absence of an instructor, they are time-consuming to produce, which cuts into teacher preparation time and placed an additional burden on them. Herreid and Schiller (2013) reported a similar pattern among the teachers they studied. To alleviate the situation, Reeves et al. (2017) suggested teachers' collaboration that may lead to job satisfaction and students' achievement; otherwise, teachers may share their material to make their job easier.

Even when video creation is not an issue, the model can still be preparation-intensive. In addition to the challenge of locating quality premade instructional videos, teachers report that it is also time-consuming and difficult to prepare the materials

necessary for active, engaged in-class activities, such as worksheets and other supports, especially because these materials needed to be well-aligned with the instructional videos and must promote interaction (Chen, 2016).

Beyond these problems with sourcing or producing instructional material, the use of at-home videos presents some potential challenges. Some students may lack engagement with the material while working independently at home, absent the support and encouragement of the classroom environment. In addition, students may struggle to manage their time while watching the video, meaning it may not be an effective method of information presentation. Dembo (2004) in a study related to college students explained undergraduate students' poor time management by the fact that some of them are not dedicated and tend to procrastinate. However, Dembo (2004) suggested the following strategies to overcome the issue: we must study regularly in a calm area without distraction. What we planned must be completed within one hour with breaks. Time should be managed wisely. We must write in a calendar our appointments and be proactive.

McLean et al. (2016) indicated that the flipped classroom might increase procrastination for students who struggle to manage their time. In contrast, Adams and Blair (2019) in a study of undergraduate students found that good time management influences students' academic performance and reduces their anxiety

### *Accessibility of Information and Accommodation*

These final two difficulties with instructional material are greatly exacerbated for students who already struggle to engage with educational content even in supportive classroom sessions. Teachers who implement the flipped classroom can, therefore, find it

especially challenging to ensure that at-home instructional material is accessible for students with disabilities (Smith & Basham, 2014). For this reason, it is important that teachers ensure that accommodations are made for students with disabilities so that they can use and understand the material provided to them; in the absence of such accommodation, the model is simply ineffective for those students (Basham et al., 2016).

One way to determine whether learning materials—both original pre-prepared—are appropriately accessible (i.e., usable and understandable) for students with disabilities is to evaluate them using an independent measure. One well-developed option is the universal design for the learning scan tool (Smith & Basham, 2014), which Basham et al. (2016) determined was a valid instrument for that purpose. By using such a tool, flipped-classroom teachers can ensure that the instructional materials they use are accessible for all of their students and that everyone will be able to take part in-class activities.

## Benefits of the Flipped Classroom

The flipped classroom has various benefits—reasons for overcoming the roadblocks listed in the previous section. These range from the efficacy of the model in general, across context, student groups, and subject areas, to its suitability for dealing with specific pedagogical challenges, such as assisting consistently absent or struggling students and encouraging student collaboration.

### *Student Performance*

The flipped classroom boosts students' performance improvements during a given period compared to traditional classroom environments, across educational contexts and demographic and regional groups (Unal & Unal, 2017). Even studies that reported no significant differences between the major outcome for flipped and traditional classrooms

have noted improvements in performance-related behaviors. For instance, Chen (2016) found that although students in a control group and students in a newly flipped classroom has similar test scores at the end of a trial period, scores on two of the three chapter-specific tests given during the study were still higher for students in the flipped classroom. In addition, students who participated in the flipped classroom engaged more often in-class discussions and were more interactive with peers than were students in the traditional learning setting.

This pattern persists across other empirical work comparing the efficacy of flipped classroom instruction to that of standard classrooms. Bhagat et al. (2016) made such a comparison for trigonometry students and found that average and low achievers benefited significantly in the flipped classroom setting, showing increased test results. High achievers were not helped by the flipped classroom model in terms of performance, but they—along with average- and low-achieving students—showed separate improvements in motivation as measured by attention, relevance, confidence, and satisfaction.

Olakanmi (2017) studied the results of a similar direct comparison between two classrooms, one flipped and the other standard, focusing on changes in students' knowledge about rates of chemical reactions during the trial period. Students in the two groups had similar pretest scores. Those in the flipped classroom learned significantly faster, and knew more at the end of the trial, showing more than twice the average improvement demonstrated by students in the standard classroom. They also reported that they felt more actively engaged in their learning, were better able to work collaboratively with their peers, and received more high-quality instruction (Olakanmi, 2017). These

results were obtained despite some students displaying resistance to the new model and as a result, sometimes coming to class unprepared. This group was relatively small, however, and 85% of the participants felt positive about the new classroom structure (Olakanmi, 2017).

Unal and Unal (2017) conducted a quasi-experimental study to determine how using the flipped classroom model influenced student performance, how students perceived the flipped classroom model, and how satisfied teachers were after implementing it. They found that student attitudes mattered; students with more positive perceptions of the model benefitted more from its implementation. It also improved teacher satisfaction. This result is supported by Gough et al. (2017) finding that teachers perceived that the flipped classroom was providing benefits for their experience during both in-class and out-of-class instructional time.

### *Support of Absent Students*

The flipped classroom may support absent students. The model was born of an attempt to allow frequently absent students to avoid missing material (Bergmann & Sams, 2012). Recent work suggests that teachers believe that the flipped classroom benefited absent students' educational outcomes (Gough et al., 2017). If a student plans to be absent, they may be given access to the relevant videos before leaving, ensuring that they can make up the missed material at home. If the absence was not planned, the student still has the opportunity to catch up at a later date, due to the greater flexibility of direct instruction afforded by the use of video tools.

### *Supports Struggling Students*

The model can be of use to struggling students for the same reasons it is helpful to those who are consistently absent: it allows them to invest as much time as they need to grasp a particular topic or concept (Gough et al., 2017). In general, low-achieving students perceive flipped classrooms more positively than do high-achieving students. They benefit more from the model's implementation, as they are the ones for whom additional one-on-one time with the instructor and additional time to re-watch key lecture content have the potential to make the most difference (Bhagat et al., 2016; Nouri, 2016).

### *Student Collaboration*

According to Foldnes (2016), "cooperative learning occurs when students work together in a group to reach their learning goals through discussion and peer feedback" (p. 2). Student collaboration is fundamental to the social aspects of primary and secondary education, and the flipped learning model fosters collaboration among students by giving them many more flipped learning in higher education and found that they encourage collaboration among students. Gomez-Lanier (2018) found that students' perceptions of collaboration in the flipped classroom model were positive. Osgerby (2013) reported results concerning students' attitudes toward flipped classrooms—they believed the model helped them work with their peers. Teachers in secondary school environments shared that belief and suggested that the model helped students build positive relationships with one another (Gough et al. 2017). Separate research suggests that this is because the model gives the students more face-to-face interaction time, during which they are asked to rely on one another's learning, judgment, and abilities, and to achieve joint goals (Gomez-Lanier, 2018).

There is also evidence to suggest that this greater degree of collaboration is part of the reason that flipped learning boosts performance. When students work together, they have been found to develop improved critical thinking and communication skills (Al-Zahrani, 2015). Similarly, in a comparison of a flipped classroom in which students worked individually and one in which they worked together, with feedback, the author concluded that the collaboration scenario increased their learning and made the in-class activities more effective (Foldnes, 2016).

### *Parental Involvement*

According to Karakus and Savas (2012), "parental involvement" refers to how parents devote resources—time, money, attention—to their children within some sphere of activity (p. 2977), and it can significantly affect student educational achievement. Parental involvement may involve bringing children to school, supporting them with their homework, or other forms of assistance and encouragement. Overall, parents play an important role in students' academic success (Hayes, 2012; Rafiq et al., 2013). Barger et al. (2019) determined that parents' involvement in children's schooling is important not only for homework but also for academic adjustment. Erol and Turhan (2018) found that parents' involvement in students' education increases students' engagement.

The flipped learning model has the potential to increase parental involvement, although results are preliminary. Gough et al. (2017) found that teachers perceived that the flipped classroom improved parent involvement in learning-centered discussions. Challenged students may need more support from their parents because some are easily distracted. Shifting direct instruction to the home gives parents a chance to play this straightforward supportive role. There are some limitations on parental involvement in

flipped learning. Some parents are unable to support their children due to language barriers (Hornby & Lafaele, 2011), while other parents may not be available at home during homework hours due to employment or other commitments.

### *Instructional Considerations*

The flipped learning format allows teachers to become significantly more involved in student problem-solving and to engage with students in a wide variety of ways. According to one study, teachers in flipped classrooms report that the modal motivated their students to learn, created more opportunities for students to engage in active and higher-order thinking, and increased student-teacher interaction by placing it at the center of all classroom time (Gough et al., 2017). Similarly, Chen (2016) found that the flipped classroom model gave students increased time to practice their skills during which they were able to get help from their teachers, increasing the effectiveness of skill-based exercises.

### *Personalized Learning*

Flipping classrooms also gives teachers the chance to personalize education to a greater extent (Gough et al., 2017). Bergmann and Sams (2012) explained that the model helps to generate instruction that matches the specific needs of individual students, both by increasing direct student-teacher interaction and by allowing teachers to plan lessons and activities that match those needs in a one-on-one manner.

## Flipped Learning and Inclusion

Education can be called inclusive when all students receive instruction in the same environment with accommodations made for those who need them to benefit from the lesson (Anastasiou et al., 2015; Haug, 2014). When classrooms are inclusive,

challenged students are placed in the Least Restrictive Environment (LRE) possible. They are not obliged to move to specific spaces and perform separate activities. Instead, they receive instruction with other students in a general education environment. Although Bergmann and Sams (2012) applied the flipped learning model only to a general education setting, there is good reason to agree that it has potential for inclusive classrooms, where students with disabilities and students without disabilities are mixed. There are very limited studies conducted on the flipped classroom in inclusive learning, but the findings of the model's efficacy and support for personalization and struggling students are encouraging. This is an area that demands further exploration, especially with differentiation, self-pacing learning, and immediate feedback. All of these are features of flipped learning that may be useful to students with disabilities. Each of these aspects is discussed here.

### *Differentiation*

Differentiation refers to offering a plurality of targeted, refined learning materials or exercises: differentiating the educational offerings according to the varying needs and abilities of different students. Beasley and Beck (2017) indicated that with differentiation, teachers take into consideration the essential requirements of all students. Tucker (2012) stressed the importance of differentiation for supporting students who are struggling to learn, as undifferentiated materials are often inaccessible to them.

It seems likely that flipped classrooms are ideal environments in which to practice differentiated instruction. Bergmann and Sams (2012) argued that flipped learning allows students who are struggling to receive more help, and teachers using the flipped learning model have more in-class time to differentiate the lessons they offer. For instance, they

can more freely employ one-on-one or small-group instruction to provide students the support they need to understand a concept or skill. Similarly, in the flipped classroom the teacher may offer tiered activities, with multiple options for completion designed for different students, presenting the same concept or idea but with differing degrees of challenge (Altemueller & Lindquist, 2017). Tomlinson (2014) developed a technique for creating tiered lessons by scaffolding activities, using autonomy as a form of challenge.

These are not the only options for differentiation. It can also be achieved using assistive technologies to modify the experience for challenged students. Speaking generally, assistive technology can be a great tool for allowing students with specific special needs to participate fully with their peers in in-class activities (Altemueller & Lindquist, 2017). Of course, the technologies must be individualized within the classroom to match the needs of the unique individuals present and introduced only when it supports how those students learn best. Technology is important not because it is powerful but because it adds flexibility, allowing teachers to tailor content and learning materials, as well as the speed and rate of delivery of new ideas, to the capabilities of each student (Liftoff, 2015). Examples include captioning applications, text-to-speech software, word processors with speech synthesizers, and alternative keyboards. Using these and other methods, teachers can prepare and implement lesson plans that address the specific needs of each student.

### *Self-Pacing*

The flipped classroom gives more flexibility for students to control how, when, and in what manner they tackle each learning challenge. Bergmann and Sams (2012) pointed out that the model allows students who, for instance, struggle to pay attention to

re-watch instructional videos as many times as they need to, in whatever environment works best for them. This is an example of self-pacing: allowing students to determine how quickly they move through, and move on from, each component of a lesson. Teachers record the instruction and make it available to students. Challenged students can rewind the video several times to master the materials whereas students who learn quickly can watch the instructional video and move to more complex concepts (Altemueller & Lindquist, 2017).

### *Immediate Feedback*

Another crucial aspect of successful inclusive teaching is feedback. Ghaderi and Farrell (2020) defined feedback as "the building block of assessment and an essential component of effective teaching" (p. 1). Feedback is derived from interactions between teachers and students and helps teachers adjust future lessons so that they better support student learning. It also helps students confirm their understanding of a concept and build confidence in their own abilities. Feedback is so important because it "enables good habits to be reinforced and faulty ones to be corrected" (Ramani & Krackov, 2012, p. 787).

Baron (1988) identified two primary types of feedback: destructive and constructive. Destructive feedback hurts students and hinders their learning, as when a student receives a comment on a paper that makes them believe they cannot do what was asked—that the task is beyond their abilities. This type of feedback is often the result of insufficient attentiveness, effort, or time on the part of teachers. In contrast, constructive feedback empowers students and motivates them to learn. Paterson et al. (2020) indicated that feedback plays an important in the learning process.

Constructive feedback supports successful instruction (Al-Hattami, 2019). Receiving constructive feedback shortly after completing tasks is important for students in general and challenged students in particular, as it helps to guide their learning process and keep them engaged both cognitively and emotionally. Some students with disabilities have attention deficit disorders and tend to forget quickly what they learned so that feedback must be immediate if it is to be understood. If given too late, feedback will come only after a student has already forgotten key parts of the activity or material and will have no effect. Flipped classrooms excel at providing opportunities for constructive feedback. Feedback-free activities (listening to lectures) are moved to the home environment, while opportunities for feedback, which typically arise during the interaction, are far more plentiful and consistently available.

## Summary and Conclusions

This chapter presented an overview of the literature related to the two core components of the study: the concerns-based adoption model (CBAM) and the flipped learning model. It began by describing the literature search strategy that was used to collect past research on both topics. It then examined the CBAM in significant depth, providing an account of its development, the concepts that are central to it, and the crucial operationalized elements that support its application to cases like the one at issue here, namely the stages of concern and the levels of use. Its relevance and suitability were explained. The chapter then discussed the flipped learning model itself, covering its history, purpose, and key elements, as well as giving an in-depth account of its effects, barriers to its implementation, and the benefits it affords in general and for inclusive classrooms in particular. What is known from the literature review is that despite some

obstacles to its use, the flipped classroom model presents great advantages for students. This study was relevant because it filled the gap in the literature by enhancing our understanding of the teachers' perceptions of the flipped classroom.

Chapter 3 includes descriptions of the methods that will be used for the study: participants' selection, data collection, data analysis, and the rationale for each of these choices given the literature reviewed.

# Chapter 3: Research Methods

The purpose of this chapter is to lay out the research methods that were used in the study to understand teachers' perceptions of the flipped classroom model in inclusive high school settings. After an overview of the research design and rationale, the chapter reviews the role of the researcher, the methodology, the issues of trustworthiness, and a summary.

## Research Design and Rationale

The study's primary research question and sub-questions were:

- RQ 1. What are teachers' perceptions regarding the flipped classroom model in inclusive high school settings?
- RQ A. How well informed are teachers about the appropriate and effective use of the flipped classroom model in inclusive settings?
- RQ B. What are teachers' perceptions about implementing and managing a flipped classroom in inclusive settings?

The central phenomenon of this qualitative research study was teachers' perceptions of using the flipped classroom in an inclusive setting at the high school level. A research design is a framework that guides the techniques and processes used to conduct a given piece of research. Through the lens of education, Plomb (2013) suggested design research as a way of planning, expanding, and assessing an educational method; Cook and Cook (2016) explained that qualitative research—such as the present study—uses non-numerical data. According to their definition, qualitative research is a situated activity that locates the observer in the world, allowing them to explore relationships, behaviors, concepts, and environments. Qualitative research consists of a

set of interpretive, material practices that make the operations of the real world visible in a concrete manner as research outcomes, results, or documentation (Latour, 1999). These practices transform the world. They turn it into a series of representations, including field notes, interviews, conversations, photographs, recordings, and memos to the self (Latour, 1999).

At this level, qualitative research involves taking an interpretive, naturalistic approach to the phenomena under study. The nature of this approach is that qualitative researchers examine things in their natural settings, attempting to make sense of or interpret phenomena in terms of the meanings people bring to them (Denzin & Lincoln, 2011). One feature of qualitative work is that the researcher is the primary instrument; they have the responsibility to collect data through documents, observation, and interviews, and are forced to rely on their perceptual acuity and sensitivity to emotional and social dynamics. Another characteristic of qualitative research is that it uses multiple methods, including interviews, observation, and systems of semi-formal documentation, to track events and their significance for participants. Finally, qualitative research is complex, because it uses inductive and deductive reasoning to construct valid arguments and conclusions, meaning that each qualitative finding is grounded in a long list of unique, specific observations, rather than summaries or averages.

Each design is used under certain conditions, according to the problem it is intended to solve. However, the design used for this study was none of the specific approaches mentioned above; instead, I adopted a “generic” qualitative design, also known as the “basic” qualitative design or an “interpretive” approach. A generic qualitative study involves research that is not guided by one single and universally known

method (Caelli et al., 2003). They are not defined by adherence to a single established methodology (Kahlke, 2014). Instead, the generic method consists of blending methodologies to create a new one, purpose-built to the case at hand, and typically intended to be more open-ended and adaptable to shifting or unpredictable circumstances. Lim (2011), for instance, reported that generic qualitative approaches used inductive method, open codes, and thematic analysis. Percy et al. (2015) indicated that generic inquiry was a suitable method when no other research design could be used.

As far as the data collection was concerned with the generic study, the core of the approach is to collect extremely rich data until further data collection is not yielding new insights (Lisha, 2016). For this reason, generic approaches are most useful when attempting to understand how people explain what they know, envision the world, and describe their experiences. Percy et al. (2015) agreed, writing that the method was fundamentally subjective, dealing primarily with attitudes and beliefs along with other forms of reflection, experience, and human-world relationships. Percy et al. added, the generic qualitative study uses data from people in the real situation or from their knowledge. Bellamy et al. (2016) mentioned that the generic qualitative study differed from other qualitative methods by using a large sample; by so doing, it provided a general idea on the issue being studied. Lisha (2016) focused on flexibility as an advantage of the generic approach. It is thus grounded in experience and is adopted here as a consequence of the present study's focus on teachers' perceptions, attitudes, and beliefs.

The basic qualitative method is a good fit for this project because it is flexible and well-suited to studying personal experiences and attitudes. Lim (2011) supported that

flexibility, saying that it is suitable for research with limited theories; but some researchers still use it when there are various literature and theories on their topic. These comments fit in this context. There was limited research on the topic at issue here. For these reasons, this study adopted a generic design, as explained in the following sections.

## Role of the Researcher

In general, a researcher carries out a study and occupies a multidimensional role in constructing the results and linking them to observed phenomena. In a qualitative study, the researcher is the main instrument of research; they collect data through observation, note-taking, and interviews, and are responsible for using judgment, skills, and perceptual abilities to ensure consistency and reliability to the greatest extent possible (Creswell, 2016). Nilson (2016) explained that the researcher necessarily practices an especially rigorous form of self-awareness that involves identifying and attempting both to bracket and compensate for one's own subjective biases, assumptions, and preconceptions to better isolate and understand differing views or interpretations. The researcher should avoid biases and research with objectivity. Patton (1990) stressed that the researcher should be values-neutral and without an agenda. This section explains the role of the researcher in the present study concerning emic and etic perspectives on research.

A researcher can decide to adopt either an emic or etic role depending on the nature of the study. Placing oneself in an emic role means that the researcher is an insider participating in the activity under study (this role is sometimes called the *participant-observer).* The etic role is one in which the researcher is an outsider with an objective

view of the research topic, looking in on events from a more distant and detached perspective. Pike used the words *emic* and *etic* for the first time in 1954 and developed them in later books. According to Pike, the etic approach considers theories that already exist and uses prior hypotheses and viewpoints to frame its investigation. Berry (1999) noted that the etic approach has four benefits; training in etic methods typically involves encounters with a wide range of phenomena and customs, broadening the researcher's ability to quickly recognize events in which they found themselves. It also allows practitioners to become familiar with a range of recording and analysis techniques as they learned to wrestle with multiple sources of rich data. At the same time, the etic approach is necessary—there is no way to approach a problem for the first time other than to dive in experientially and subjectively. And finally, etic approaches are typically simpler and more cost-effective (Berry, 1999).

Nonetheless, Yin (2010) viewed an emic perspective as the way the insider perceived reality. Willis (2007) connected the emic concept to the vision of the person being used for the study. It thus might, for instance, rely more heavily on second-hand accounts rather than the experiences of the researcher. Berry (1999) laid out its advantages: It explains how a language or culture is built, how people live every day and helps to make a prediction related to behavioral science.

Some researchers (Garcia, 1992; Godina & McCoy, 2000) suggested that emic approaches were the best means of studying a particular cultural group. This was because one needed to be part of a group to fully if they were to understand its social, emotional, and experiential dynamics. However, for the present study, which took place in a limited space and restricted the design to an etic approach, the chief difficulty was that I was not

able to be present in any of the classrooms where flipped learning was going on. Moreover, my presence would have significantly altered classroom dynamics (it is a very difficult environment in which to be a neutral participant and observer), and part of the study's goal was to collect reflective and meta-reflective perspectives from participants, rather than in-the-moment experiences. For all of these reasons, an etic approach was deemed most appropriate. The etic approach is a deductive approach using what is known as a foundation to understand a study (Monteagut, 2017). The etic approach uses universal criteria to evaluate an issue related to a specific group; in this study, the specific group was related to high school students with disabilities working alongside students without disabilities.

As a researcher, my role was to conduct a phone interview with 11 teachers. Teachers qualified for this interview had to be implementing the flipped classroom model in high school in an inclusive setting. I sent a consent form to participants, then an invitation letter, and finally a follow-up letter. I was responsible for the entire process including the interview, the transcription, and the data analysis. Participants in the interview received a copy of the transcript to make sure that everything was recorded and transcribed without mistakes. I had no personal or professional relationship with participants. I limited the time for the interview and refrained from building a relationship with participants to limit any bias.

## Methodology

This section describes the concrete research methods employed by the study. As mentioned above, this research used a generic qualitative design and an etic positioning of the researcher relative to participants and then combined interviews with several

analytical tools to best address its research questions. This section includes a discussion of (1) participant selection logic, (2) instrumentation, (3) procedures for recruitment, participation, and data collection, and finally (4) data analysis plan.

**Participant Selection Logic**

It was a challenge to find participants for this research because there are limited high school teachers implementing the flipped classroom model in an inclusive setting. Limited research indicated the existence of associations of flipped classroom teachers. Such associations could have facilitated the contact with teachers using the flipped classroom model and researchers in that area. I attended my fourth residency and had the opportunity to meet with high school teachers using the flipped classroom model in their school. These teachers were not able to participate in this research, but they referred me to other teachers using the flipped classroom model. The population for this qualitative study was high school teachers using the flipped classroom model in inclusive settings. The sample was 11 high school teachers who were implementing the flipped classroom. The reason for selecting that sample was that these teachers used that model daily and understood how it worked. The criterion to participate in the interview was that regardless of where they live, interviewees must be high school teachers using the flipped classroom model. Recruitment was based on trust; however, if an interviewee had been unable to answer basic questions about flipped classrooms, it would have been an indication that they might not be the right candidate for the interview and the interview would not have been validated. This risk was considered as a limitation of the study in Chapter 5. Participants were identified, contacted, and recruited through social media.

Those who were willing to take part in the research received via email the letter of invitation to participate in the study.

The complex issue was to determine the number of participants needed to reach data saturation. There is data saturation when information becomes repetitive and redundant (Hennink et al., 2019). Patton (2015) explained that in qualitative research, no rule governs the size of participants. There are few strict guidelines on the size of the sample needed for qualitative research. Because statistical validity was not a concern, the primary worry about validity was instead to understand how participating individuals should be approached and engaged with. Boddy (2016) conducted a study on the topic of sample size but recommended no specific number. Therefore, I recruited 11 high school teachers as participants in this study.

**Instrumentation**

In-depth qualitative interviews were used to collect data. According to Seidman (2012), the interviews were the simplest way to obtain information. Boyce and Neale (2006) defined in-depth interviews as a qualitative research technique based on extended face-to-face conversations with a relatively low number of participants to better and more thoroughly explore their ideas and perspectives on a particular topic. Their purpose was best explained by Patton (2015), who indicated that the interview was used to observe what could not be easily observed and understand it. What cannot be observed includes feelings, thoughts, and intentions.

Meeting these objectives required strict procedural adherence. Rubin and Rubin (2012) defined three characteristics of a successful in-depth interview. The first characteristic is that the interviewer's focus remains on the concept or subject matter

being examined so that the interview's content remained within the bounds of the investigation and extraneous social dynamics did not interfere with data collection. The second is that the investigator gives more freedom to the interviewee to react to a topic than might occur in more tightly structured interviews, typically through the use of open-ended questions. The third characteristic of the in-depth qualitative interview is that there is no standard way of asking questions; the interviewer is flexible, so long as their questions remain focused. Reddy (2019) indicated that the in-depth interview is faster than other forms of interviews; it helps to better understand the interviewee to collect more information from them. Seidman (2012) explained these features by noting that the purpose of the interview is to understand what people have experienced and what it meant to them rather than simply to determine a timeline of events. This was another way to say that those who were involved in an event or practice are well-placed to help others to understand what they know, so long as they are given the space to do so. Castillo-Montoya (2016) explained that the goal of the interview is to acquire more information about a research topic. The open-ended questions help to collect sufficient data. The interview conducted in this study had 16 open-ended questions. A digital recorder was used to record the interview. Participation in the interview was voluntary and free. The consent form was sent to potential participants. Only those who gave their consent participated in the interview. The content validity was established from the interview process; participants reviewed the transcript to make sure that it was accurate.

An in-depth interview helped collect data about teachers' perceptions related to the flipped classroom model in high school settings. Open-ended questions were used to better understand interviewees' thoughts about an issue. Table 5 provides a description of

the alignment of the interview questions and the conceptual framework. The interview questions can also be found in the Appendix.

**Table 5**

*Alignment of Interview and Research Questions*

| Interview question | Research question |
|---|---|
| 1. Describe your knowledge of the flipped classroom<br>2. Describe how you perceive the flipped classroom model in inclusive settings | RQ1. What are teachers' perceptions regarding the flipped classroom model in inclusive high school settings? |
| 3. How does the flipped classroom model support students with disabilities in your class?<br>4. Describe any accommodation you use for students when implementing the flipped classroom<br>5. How does that accommodation support students with disabilities in the flipped classroom? | RQA. How well informed are teachers about the appropriate and effective use of the flipped classroom in inclusive settings? |
| 6. Describe how you perceive the implementation of the flipped classroom in the inclusive high school setting<br>7. What is your perception about managing a flipped classroom in inclusive settings?<br>8. How do you perceive teachers' collaboration in using the flipped classroom in inclusive settings?<br>9. How does the flipped model support students with disabilities to learn the content?<br>10. How does the flipped model support students with disabilities in ameliorating their critical thinking?<br>11. How do you use the flipped classroom model to support students with disabilities who lack the motivation to learn during the instruction?<br>12. How do you use the flipped classroom model to support students with disabilities who lack focus during the instruction?<br>13. How do you use the flipped classroom model to support students with disabilities who display some behavior issues?<br>14. What do you perceive as the impact of using the flipped classroom model to support students with disabilities working alongside their peers without disabilities?<br>15. What do you perceive as the potentials of using the flipped classroom model to support students with disabilities working alongside their peers without | RQB. What are teachers' perceptions about implementing and managing a flipped classroom in inclusive settings? |

| Interview question | Research question |
|---|---|
| disabilities? Otherwise, what are some possible benefits of the flipped classroom for students with disabilities working with their peers without disabilities? | |
| 16. What have I left out that you think is important? | |

**Procedures for Recruitment, Participation, and Data Collection**

The target population for this study was high school teachers using the flipped classroom model in inclusive settings. In the present context, an inclusive setting was one where students with disabilities were learning alongside their peers who were not disabled in the same classroom environment, participating in the same activities, and being taught by the same instructors. The rationale behind the selection of this population was that teachers spend most of their days working with students. They are better-placed than anyone else to provide the information needed to understand how flipped classrooms do or do not supports students with disabilities and their peers.

The recruitment of participants was a multi-step process. It began with a semi-formal process of outreach to individual teachers using a variety of professional and social platforms, primarily online. In all cases, the researcher had no prior relation to any of the participants or the schools at which they are employed; all contact with those participants was the initial encounter. The social media that were used included social networks (such as LinkedIn and Facebook), discussion forums, interest-based networks, and teachers' associations. These networks were highly active loci of discussion about flipped classrooms and the teaching methods they required, and so this was a far more direct and efficient recruiting method than identifying participants in a more traditional

manner that would involve contacting school administrators first and systematically circulating a request for teachers involved in flipped classroom pedagogy. Once potential participants who were flipped classroom teachers were identified and had expressed at least a baseline level of interest, individuals were formally recruited via a phone screening and onboarding process.

This approach had several advantages over more traditional recruitment methods. Chief among these was the fact that apart from the agreement with participants, the researcher did not need any authorization. Social media allowed for much faster and more direct contact than would waiting for school administrators to forward emails to every teacher, and for teachers to decide whether to respond through that more formal channel. The informal nature of social media allowed for quicker and more open initial contact, without any mediating bureaucratic structures, so recruitment was quick and successful. This method also has the potential to save money. When participants agreed to participate, I set up a time for a phone interview. This strategy helps to save time and money that could have been necessary for travel. The system was also more flexible than traditional methods, allowing for the easy recruitment of participants from different states and countries.

Ethical approval was sought from the Walden University Institutional Review Board. Upon receipt of that approval, I contacted all prospective participants by email, offering information about the study and inviting them to participate. That first email stated the purpose of the research, the potential outcome of the study, and how it could contribute to social change as well as improved understanding of education. There was a follow-up letter to remind participants about the interview. It also included the informed

consent form so that all teachers were fully aware of all ethical issues involved. Any teachers willing to participate were required to complete the form, upon which they were enrolled in the study. Participants were free to exit the study at any time.

The in-depth interview was used to collect data from high school teachers who were using the flipped classroom model in their classrooms. A digital recorder was used to record the interview. Any information collected was confidential. Participant codes were used instead of participants' real names. Establishing how participants were known to meet the criterion was based on trust. There was no specific way to verify if participants' statements were wrong or right; this should be further considered as a limitation of the study.

**Data Analysis Plan**

The purpose of this basic qualitative research was to explore the perception of high school teachers about the flipped classroom model in an inclusive setting. The study's primary research question was: what are teachers' perceptions regarding the flipped classroom model in inclusive high school settings?

The study's secondary research questions were:

RQ A. How well informed are teachers about the appropriate and effective use of the flipped classroom model in inclusive settings?

RQ B. What are teachers' perceptions about implementing and managing a flipped classroom in inclusive settings?

The data were the raw material with which valuable research results and findings were generated. Mcleod (2001) stated, "in contemporary usage, data has come to mean an array of information, as in data set or data bank" (p. 137). Another word for qualitative

data is “account,” as in, the account of a phenomenon offered by a single participant (Mcleod, 2001; Maneen, 1990). The data provided evidence about whatever was being explored. The researcher examined that evidence to construct an explanation of the events at issue, based on the reported and observed facts (Polkinghorne, 2005).

In the present study, the data consisted of interview recordings, which I processed into interview transcripts. Those transcripts were coded according to a scheme that was determined to categorize responses based on a range of possible answers to the research sub-questions. The data were collected through interviews with high school teachers. Those teachers were using the flipped classroom model in inclusive settings. Creswell (2016) suggested that data could be analyzed by using big ideas to generate themes. The data collected were connected to the research questions: they all dealt with high school teachers’ perceptions of using the flipped classroom model in inclusive settings. The interview questions helped me connect the data to the research questions. The following steps were used to analyze data:

1. I reviewed the recorded interviews and compared them with the notes I took during the interview.
2. I transcribed the interviews with Temi, a software. The transcribed version of the interview was sent to each participant to check its accuracy.
3. The software Dedoose was used to create the initial coding.
4. Repeating words or phrases, as well as the emerging ideas, helped to create commonalities and generate the categories, patterns, and themes.

### Discrepant Cases

No discrepancies were observed in the process of collecting and analyzing the data. The findings were consistent about the efficiency of the flipped model for students with disabilities.

## Trustworthiness

Some authors (Mays & Pope, 1995) denounced qualitative research by saying that it is not as accurate as quantitative methods. Nevertheless, qualitative studies can offer insights unavailable from quantitative efforts; they represent a different way of conducting research. Lincoln and Guba (1985) suggested the following four criteria for assessing the trustworthiness of qualitative research: Credibility, confirmability, transferability, and authenticity.

Credibility is an important aspect of any research presentation, article, or discussion. It is how the researcher warranted trust and reuse of their findings—how they convince readers to use the outcome of their work. Polit and Beck (2014) stressed that credibility is a crucial aspect of study design; how a project is conducted might establish credibility. Benton et al. (2019) defined credibility as an efficient way to explain the reason for the study. Triangulation was used to establish the credibility of the current study. During the treatment of data, I compared the notes I took while interviewing with the interviewee's recorded statement. Merriam and Tisdell (2016) presented triangulation as the best option to support credibility. Ahmad and Jan (2018) indicated that the researcher should use multiple sources to do this, as inter-source convergence of findings inspires confidence. In this context, credibility and reliability are synonyms, although reliability "refers to whether scores to items on an instrument are internally consistent

(i.e., Are the item responses consistent across constructs?), stable over time (test-retest correlations), and whether there was consistency in test administration and scoring" (Creswell, 2009, p. 233).

Confirmability is another essential aspect of trustworthiness in qualitative research. Polit and Beck (2014) described confirmability as a matter of both neutrality and objectivity. To ensure confirmability, Connelly (2016) suggested that researchers be organized. They might work together to keep their studies objective. In sum, researchers can strive to be guided by impartiality in conducting their investigation; their appreciation of the phenomena should be fair and based on clear, replicable standards.

Transferability is similar to generalizability. It evaluates the degree to which the results of a study can be applied in different settings. Amankwaa (2016) explained that to ensure transferability, the researcher might provide exhaustive explanations of what is being studied, including the setting (and the degree to which the phenomena are setting-specific), which participants were involved, and what evidence-backed each of the claims made. Granted sufficient information on each of these points, readers can evaluate how, when, and whether the findings from one study apply to other contexts.

Authenticity is roughly a synonym of originality and is related to both reliability and validity. Here, validity is a question of employing strategies and procedures (e.g., member checking, triangulating data sources) that qualitative researchers use to demonstrate the accuracy of their findings and convey that accuracy to readers (Creswell, 2009). Polit and Beck (2014) explained that authenticity is closely linked to validity: it is the question of whether your results are specific to the potential causal or correlational factors you are studying (as opposed to being epiphenomenal or caused by general

background conditions). They suggested that researchers demonstrate the authenticity of their work by choosing the right participants and fully detailing their methods. The researcher might also use triangulation, which is a form of cross-method and cross-source data comparison, to evaluate whether these different types of data point to the same conclusions and thereby increase confidence in whatever results are obtained (Oliver-Hoyo & Allen, 2005). Successful triangulation can make it harder to mistake an observed effect as being caused by something when it is not and reduces the chances of misconstruing normal variation for a meaningful pattern. It is thus essential to establishing authenticity. In the present study, I used triangulation via inter-participant correlation and crosschecking of findings.

## Ethical Procedures

Before the data collection, the Institutional Review Board (IRB) approval was obtained on August 19th, 2020 from Walden University with the reference number 08-19-20-0261266. The IRB ensures that ongoing research projects comply with ethical guidelines. IRBs were created as a reaction to various abuses of human beings as part of past research projects, and the IRB has the right to accept or reject a research project if it violates ethical codes related to these concerns. The Board with authority over the present project is the Walden University IRB.

Writing concerning core issues of experimental design, Rubin and Rubin (1995) asserted that it was important to know what was ethical and what was unethical and focus on the ethical responsibility during the research. The code of ethics they referred to in that passage encompassed confidentiality, informed consent, and voluntary participation, which together were the most important design considerations for human subjects.

Confidentiality involves data handling and preventing access to information received from participants.

For this research, all evidence was collected with confidentiality and no one could identify participants because their names were not displayed in the results, summaries, or discussion. Only I had access to data other than the final tables and charts of summarized findings. To reinforce the confidentiality of data, any information collected for the study was stored in a computer with a strong password. Documents related to the research were kept in a secure location and will be destroyed after five years.

Before interviewing participants for this study, I obtained their consent. Concerning informed consent, the purpose of the project was explained to participants, and their entry into the study was voluntary. They were also made aware that they were free to interrupt their participation and leave the study at any time. All participants were required to sign the informed consent form, which clearly explained to them all potential risks and discomforts involved in participation, as well as potential benefits, compensation for participation, and the ease and availability of withdrawal procedures.

I had the responsibility to conduct this research with objectivity. Patton (2015) agreed that there was a connection between the reliability of the data and the person who collected that data. Merriam and Tisdell (2016) explained that the fairness of the person collecting data made the research valid and reliable.

## Summary

In this chapter, the core characteristics of the study's design were laid out, with a strong emphasis placed on establishing foundational and ethical principles and linking the choices made here to the theory of research design. It was explained that the present

study employed a basic qualitative design, within which the researcher was regarded as the main instrument and was operating in an etic role for primarily practical and logistical reasons. The methods used began with attaining IRB approval. Potential subjects were then given the consent form and elected to participate. The chapter also reviewed data collection (which used structured interviews) and addressed ethical concerns and issues of trustworthiness. The next chapter presents the study's results.

# Chapter 4: Results

The purpose of this research was to explore teachers' perceptions to determine how the flipped classroom supports high school students in inclusive settings. Eleven high school teachers using the flipped model were interviewed. The main research question was: What are teachers' perceptions regarding the implementation of the flipped classroom model in inclusive high school settings? The sub-questions were:

RQ A. How well informed are teachers about the appropriate and effective use of the flipped classroom model in inclusive settings?

RQ B. What are teachers' perceptions about implementing and managing a flipped classroom in inclusive settings?

The structure of this chapter is as follows: the first section focuses on the description of the setting. The second section explores the demographics of research participants. The third section explains how data were collected and analyzed. The fourth section deals with the evidence of trustworthiness that encompasses credibility, transferability, dependability, and confirmability.

## Setting

Participants in this study were recruited from various parts of the globe including the USA, Australia, the UK, Peru, and Canada. They were teachers who taught or who are teaching at the high school level using the flipped classroom model. The participants did not share any personal or organizational conditions that impacted them or their experience that may have influenced the outcome of the study. Participants signed the consent form after having the time and opportunity to ask questions related to the study. That consent form informed interviewees that participation in the research was free and

voluntary. Participants were also informed that they could choose to withdraw from the study at any time without retaliation or risk. Also, the consent form indicated that the study would be confidential, and that participants' names would not appear in the study. Moreover, the consent form assured the participant that the information collected would be kept confidential.

I collected participant demographics to better understand the characteristics of the sample population used for this study. The target population was high school teachers implementing the flipped classroom model in inclusive settings regardless of their race, ethnicity, or gender. The recruitment process was complex because many people were contacted but few responded who were willing to participate in the study. I used flexibility that allowed interviewees to choose the day they were available for the interview. I interviewed the participants after they gave their consent to participate in the research. Twelve teachers initially agreed to participate in the research. Eleven were interviewed because the 12th participant withdrew. I reached saturation after interviewing 11 teachers because the answers became redundant with no new information. Those participants consisted of three women and eight men. The real names of interviewees were substituted with the participants' codes. Five participants were from the USA, along with two from Peru, two from the UK, one from Australia, and one from Canada. Table 6 describes the participant codes, where they were located, their gender, their self-reported level of knowledge of the flipped model, and their years of teaching experience.

**Table 6**

*Participants' Demographics*

| Code | Location | Gender | Self-reported knowledge of the flipped model | Years of experience |
|---|---|---|---|---|
| 1 | Australia | Female | Medium | 2 |
| 2 | Canada | Male | High | 6 |
| 3 | UK | Male | High | 4 |
| 4 | USA | Female | High | 8 |
| 5 | Peru | Male | Medium | 2 |
| 6 | UK | Male | High | 6 |
| 7 | USA | Female | High | 8 |
| 8 | USA | Male | High | 8 |
| 9 | Peru | Male | High | 7 |
| 10 | USA | Male | High | 8 |
| 11 | USA | Male | High | 7 |

## Data Collection

In-depth interviews were used to collect data. To recruit participants, a flyer was created and posted on various social media platforms including Facebook, Twitter, LinkedIn, and Instagram. All participants were recruited from Facebook. Three Facebook groups were targeted: Special Education Teachers, the Flipped Learning Network, and Flipped Learning Teachers. Eighty percent of participants came from the Flipped Learning Teachers group, 15% of participants came from the Flipped Learning Network, and 5% came from the Special Education group. Besides the flyer posted in those groups, direct messages were sent to more than 500 members of those groups. The direct messages ended up being the best option to find participants. A consent form and the invitation were sent to high school teachers using the flipped classroom who were willing to participate in the study. The consent form, the purpose of the study, and assurances

about the confidentiality of the information collected were clearly explained to participants.

Twelve teachers agreed to share their experiences through the interview. Eleven participants were interviewed because the 12th withdrew; the withdrawal of Participant 12 had no impact on the result as saturation had been reached. The previous section described the location of participants. There were 3 months between the recruitment of participants and their interview. The long period can be explained by the coronavirus pandemic affecting people as well as the reduced number of teachers using the flipped classroom model when most instruction went fully online due to the pandemic. Each interview lasted between 30 and 45 minutes. The recruitment aligned with what was indicated in Chapter 3, as only high school teachers implementing the flipped classroom were interviewed.

After receiving the agreement from participants, I scheduled the interviews with them according to their availability. The interviews were conducted via phone or Zoom call. An iPad was used to record the audio from the interviews. The data were collected and transferred to a computer with a secure password before the transcription. No unusual circumstances were encountered during the data collection.

## Data Analysis

All interviews were uploaded onto the computer and transcribed with a program called Temi. Reducing the speed of that program helped to fix some inaudible portions of the transcription. More time was spent editing the transcription of participants with an accent; the transcribed version of the interview was emailed to those participants to allow them to double-check and make sure that the transcription was correct. After the

transcription of the interviews, Dedoose software was used for the data analysis. To analyze the data, I started with coding. Saldaña (2016) described coding as creating codes from information collected from participants. Inductive coding was used. Thomas (2006) indicated that the general inductive approach uses techniques that lead to results that can be trusted and accepted. The coding was done manually and automatically with the software Dedoose. Manually, I started with the initial coding by reading the transcribed and printed versions of the interview. The next step was the line-by-line coding: I went through the entire document and highlighted all possible codes. The codes emerged from the repetition of words and expressions from the document. After the line-by-line coding, I moved to the categorization by placing identical codes into the same categories. The categorization led to the determination of themes. The software Dedoose was used for the automatic coding. The comparison of the manual coding and the automatic coding helped me to identify some patterns and variations. The data were analyzed in connection to the research questions using the content analysis. Krippendorff (2019) defined content analysis as "a research technique for making replicable and valid references from texts (or other meaningful matter) to the contexts of their use" (p. 24).

## Evidence of Trustworthiness

Trustworthiness is an important component of research. It encompasses credibility, transferability, dependability, and confirmability. Chapter 3 examined the issues of trustworthiness; this section dealt with its evidence.

To ensure the credibility of the study, notes taken during the interview were compared with the interview recording and transcript to fix any mistakes found. Member checking was used as indicated in Chapter 3 by sending the transcribed version of the

interview to interviewees to verify and correct portions that were inaudible due to an accent or background noise during the interview. The same questions were asked of all participants. Finally, reaching saturation gave credibility to the research. The redundancy of information was the evidence of that saturation.

Transferability is when the outcome of the research can be used in various settings (Merriam & Tisdell, 2016). Participants in this study were recruited from different countries, which gave a broad view of the research. However, the results could not be generalized globally because for now, limited countries are implementing the flipped model.

Dependability happens when there is consistency between the data and the findings (Merriam & Tisdell, 2016). For my research, I was consistent from the recruitment of participants to the data analysis; the same invitation email was sent to all potential participants in my study. The same questions were asked to all study participants with the same interview protocol. The same journal was used to track the collected data.

Confirmability refers to neutrality and objectivity, and the ability of an outsider to understand and potentially replicate the research process. During the interview process, I did not build a relationship with interviewees that could influence the outcome of the research. To ensure confirmability, no sentence was added or subtracted from the transcribed interview after the correction. Interviewees' statements were used as is, without alteration.

## Results

The research question was: What are teachers' perceptions regarding the implementation of the flipped classroom model in inclusive high school settings? The sub-questions were:

RQ A. How well informed are teachers about the appropriate and effective use of the flipped classroom model in inclusive settings?

RQ B. What are teachers' perceptions about implementing and managing a flipped classroom in inclusive settings?

This section:

- addresses the research question and sub-questions above
- presents data to support the results
- discusses discrepant cases

To obtain the result that guided to answer the research questions mentioned above, the primary coding was used as well as the identification of the patterns, themes, and variations. The primary coding yielded the results shown in Table 7.

**Table 7**

*Primary Coding*

| Codes | Number of Responses |
|---|---|
| Students with disabilities | 16 |
| Watching videos | 12 |
| YouTube videos | 11 |
| Classroom management | 10 |
| Extended time | 10 |

| Codes | Number of Responses |
|---|---|
| Inclusion | 9 |
| Internet | 9 |
| Students at the center of learning | 9 |
| Benefits of the flipped classroom | 8 |
| Learn the content | 8 |
| Complete the task | 8 |
| Mobile devices | 8 |
| Motivation | 8 |
| Rewind videos | 8 |
| Use of technology | 7 |
| Accommodation | 7 |
| Engaging students | 7 |
| Extra support | 7 |
| Take leadership role | 6 |
| Collaboration | 6 |
| Independent learner | 6 |
| Differentiation | 5 |
| Behavior | 5 |
| Empower students | 5 |

Information from the primary coding was synthesized into four themes:

- Teachers' appreciation of the flipped model
- Benefits of the flipped model
- Classroom management and support to students with disabilities
- Accommodations used to support students with disabilities.

Table 8 illustrates the connection between the research questions and the themes.

**Table 8**

*Research Questions and Themes*

| Research questions | Themes |
|---|---|
| How well informed are teachers about the appropriate and effective use of the flipped classroom? | 1. Teachers' appreciation of the flipped classroom |
| What are teachers' perceptions about managing a flipped classroom? | 2. Benefits of the flipped model |
| | 3. Classroom management and support for students with disabilities |
| | 4. Accommodations used to support students with disabilities |

The first sub-research question was: How well informed are teachers about the appropriate and effective use of the flipped classroom? This was operationalized in the data analysis through these questions: Are teachers well educated about making proper use of the flipped classroom? Do they use the flipped classroom effectively? What concerns do they have while implementing the flipped model? The two themes answering that question were how teachers appreciated the flipped model and the benefits of the flipped model.

### 1. Teachers' Appreciation of the Flipped Classroom

To examine teachers' appreciation of the flipped model, it was important to explore their knowledge and their concerns about the model. Almost all participants knew how to use the flipped classroom: those who were in their second year of teaching such as Participant 2 and Participant 5 indicated that they were still working to

understand the concept of the flipped model. Other teachers with more than two years of experience knew how to use the flipped model appropriately and effectively. Participant 4 indicated that she had a good knowledge of the flipped model and was a trainer in the flipped classroom model. Participants who used the flipped model for at least 6 years such as Participants 4, 6, 7, 8, 9, 10, and 11 were competent in implementing the flipped classroom; this was an indication that the more teachers used the flipped model, the more they knew and understood the concept.

Insights on teachers' knowledge of the flipped model were derived from the first and second interview questions (see Table 5). All participants had at least two years of experience with the flipped classroom model. The more experienced participants used the flipped model more efficiently, compared to the least experienced teachers, especially in the area of classroom management and students' motivation. Participant 10, a veteran teacher from the USA, indicated that since 1978, she had used various models similar to what is today considered the flipped model. Participant 4 had a very rich understanding of the flipped classroom. She said:

I am a leader of Flipped Learning Network and was able to work with other educators to discuss flipped learning and to host flipped learning events. I have been a board member of the Flipped Learning Network for three years. I have extensive experience with the flipped learning.

Participant 1 viewed the flipped classroom as a model where the teacher can change part of the lesson from individual space to group space. She also mentioned that with the flipped classroom, students watched the videos beforehand, have the content information; when they come to class, they can work on some activities during class time.

It is very helpful for students because they can go back and watch the videos as much as they want. Participant 7 indicated that with the flipped model, teachers used face-to-face time for the higher-level thinking activities and skills, they worked with the students and saw them applying what they knew. This statement indicated that the participant had a good knowledge of the flipped model. She also mentioned that she makes students watch short videos at home and either take notes in a Google document or answer questions on a slide; when students come to class, they review and do some activities right away. That participant used an application called "Edpuzzle" to create interactive video lessons for students. This section addressed the first research sub-question (RQA), how well informed are teachers about the appropriate and effective use of the flipped classroom model in inclusive settings? In summary, participants in this study had a good knowledge of the flipped classroom model.

Teachers' appreciation of the flipped classroom model varied according to the subjects taught. All participants were high school teachers teaching various subjects. Those subjects included math, English, science, and chemistry. Some participants, especially special education teachers, were teaching several subjects in their self-contained classes. English teachers who were interviewed had a positive appreciation of the flipped classroom. Science and chemistry teachers had the same appreciation. Math teachers also indicated that the flipped classroom was a great educational tool. Students watch and interact with the videos at home to learn. In the classroom, students received the extra support they need. However, chemistry teachers indicated that some students found it complex to digest the videos from home because they did not have a laboratory to implement what they see and forget what they learned before coming to class.

Teachers in the self-contained classroom indicated that it was not easy to teach all subjects using the flipped classroom.

Almost all participants agreed that the flipped classroom was an effective model. Those who disagreed were dealing with students with severe disabilities: Participant 1 stated, “it is the only teaching technique I have ever come across that works equally well for students who need extra support and other students.” She continued by saying that with the flipped classroom, students are able to get a lot out of it; they work at their own pace. Participant 2 mentioned that the flipped classroom had been easy so far and that it had helped both teachers and students. Participant 3 stressed that it worked exceptionally well because it gave students the freedom to access the information of their own accord and in their preferred way. For students with mental health disabilities, the flipped classroom model helped them to catch up on any missed work in their own time. Participant 4 stated:

> I think the flipped learning is a valuable tool. For students who have cognitive deficiencies for example, if they are slow auditory processors and hearing a teacher speak in class, and if there is a delay in understanding what the teacher is saying, those auditory processors can miss out on a lot of information. The video could be a tool and a substitute, but also a modification of the listening experience because now the students can take the power to pause and rewind the video for instructional purposes.

Participant 4 was a special education teacher in the self-contained classroom. Some of her students had autism; others had multiple disabilities. She stated, “I spend more time managing students’ behavior than teaching. They break any electronic devices

placed in front of them, especially when they are angry. They do not do well with the flipped model." Participant 8, another self-contained teacher indicated, “students in my classroom are very low-function students. Their attention span is very limited, which makes the implementation of the flipped classroom difficult.”

Participant 5 preferred to work with just-in-time teaching. Participant 6 appreciated the technology connected with the flipped model. He indicated that if a student is very reluctant or hesitant to speak up in class, the technology gives him a voice in the form of writing or whatever role he chooses to take within a group. The teacher becomes the facilitator. Students with reading hearing or learning difficulties have an opportunity through the flipped model to mold their learning and their understanding and find a way to make their voice heard. By associating Bloom’s taxonomy with the flipped model, he avoids the differentiation by prejudice for a more differentiation by outcome approach. Participant 7 agreed that the flipped model supports students with disabilities in different ways: it allows them to hear and see things in different settings. If they do not remember what the teacher said, students can go back and re-watch the video. The flipped classroom gives students an extra level of support. It also allows them to pause the video whenever they need to stop and have extra time to process. Many students with special needs have auditory processing issues. The flipped model allows the students to slow the pace of the video down for their particular learning disability. Participant 8 stated:

> I think that it is most beneficial to students who might have learning disabilities, who are in an inclusive classroom because one of the huge benefits of the flipped classroom is practice and feedback in real-time and getting instruction that is responsive to students’ needs. That is good for any student, but I think especially

> with students with IEP or a 504 plan: they can watch the videos, pause them, and re-watch them.

Participant 9 implemented the flipped learning via asynchronous learning and in-class learning, stating:

> asynchronous is a process where students actively learn before the class. Students and teachers are not communicating in real-time. Students learn at their own pace through videos the teacher posted. During in-class learning, students and teachers are in the classroom working on specific activities. This is a great system for students with disabilities.

Participant 10 stated, “my perception is that it works for students with disabilities.” For Participant 11, the flipped classroom allowed students to watch the video multiple times. For students who have disabilities in reading, the audio component supports them with comprehension.

What participants appreciated the most was that with the flipped classroom students were at the center of the instruction. They had more responsibility. Participant 6 stated, “It gives students more control over their learning, as opposed to the teacher having a more kind of didactic approach.” The common challenge found was the difficult collaboration among teachers. Some teachers did not want to work with others. The lack of collaboration made it difficult for teachers to share their videos. As far as videos are concerned, Participant 7 mentioned that some students did not like the videos created by a different teacher. While examining the theme above, the country where participants

worked, their subject area, and whether they were special education or general education teachers did not indicate any patterns:

Despite their appreciation of the flipped classroom, participants expressed their concerns about the model. Some teachers interviewed indicated that they were already working with their school when their school district switched from the traditional model to the flipped classroom. Other teachers mentioned that they were hired by their current school with no background in the flipped classroom. Their first concern was related to the use of technology. Participants 1, 3 4, 5 stated in different words that they did not know anything about the flipped classroom when they were hired; they were concerned about which technology to use and how to use it to implement the flipped model. Other participants were already in their school when their school district decided to move from the traditional system to the flipped classroom. They had different concerns. Participant 2 stated, "when my school started the flipped classroom, I was afraid to lose my job." Participant 6 said "my concern was how to adjust to the new system. All participants were concerned about the collaboration; in different words, they did not know if their colleagues would accept to work together to be successful in the new model. Participants' concerns aligned with the CBAM because the CBAM dealt with teachers' concerns in the implementation of a new concept.

The second theme related to the first sub-research question was the benefit of using the flipped classroom model.

**2. Benefits of the Flipped Model**

There were several benefits of the flipped classroom model for students with disabilities. Those benefits included the amelioration of collaboration among students, the

autonomy students had over their learning, the amelioration of students' critical thinking skills, and the support of students who lacked focus during instruction. The flipped classroom model also supported students to learn the content. Interview question 15 asked, "What do you perceive as the potential of using the flipped classroom model to support students with disabilities working alongside their peers without disabilities? Otherwise, what are some possible benefits of the flipped classroom for students with disabilities working with their peers without disabilities?" There is collaboration when students work jointly with others to achieve their goals. According to Participant 1, the flipped classroom encouraged students to work together and helped students to understand the concept. Participant 2 mentioned that with the flipped classroom, students without disabilities helped students with disabilities. During group activities, students with disabilities received support from their peers without disabilities. Participant 8 stated, "the huge perks and benefits of the flipped classroom are opportunities for students to get practice and feedback and also opportunities for collaboration with others; that is integration, that is true inclusion." Participant 9 said, "I think the impact is positive."

Autonomy means students take control of their learning. Participant 3 viewed the flipped classroom as an instructional method that gives more freedom to students in their learning. The flipped model, as Participant 4 indicated, allows some peer modeling. It allows students to take a leadership role or to take some group responsibilities. Students watch videos in their individual learning spaces. When they are in a group space, they focus on the connections that they are making with their classmates. The teacher is no longer dictating any action to students; he/she sets the conditions in which the learning is

happening in the group space, but students own the group space. They interact and support each other. Ten participants out of 11 agreed that the flipped model gives more autonomy to students and empowers them. Participant 11 did not agree with the autonomy and mentioned that there should be some modification for students with disabilities to give them help in real-time; those modifications may include typing, having questions read out loud to students, pausing and replaying the videos as needed, and tweaking the lessons to adjust them to each student's needs, differentiating the lessons.

The improvement of students' critical thinking was another benefit of the flipped classroom. The following analysis derived from the interview question 10, "How does the flipped model support students with disabilities in ameliorating their critical thinking? Interviewees first described critical thinking and explained the methods they used to improve students' critical thinking skills. Participants used different methods to improve students' critical thinking skills. What those participants had in common was that they let students watch videos and reflect on where they want to work. Students can work in groups or one-on-one with the teacher. Participants acknowledged that in the flipped classroom, the in-class time was organized around engaging activities. Participants 4 and 5 indicated that they gave more autonomy to students, with the option to show that they can work collaboratively. They let students demonstrate their understanding within group activities. The perception of Participant 6 about critical thinking was that with the dialogic approach, the teacher gives students the content and they interpret it from a constructivist perspective. Students created their meaning and form a network to share their findings with others. For students with disabilities, it was not just about them being

able to understand the content at their pace. They had more opportunities to construct their meaning and then share it. Participant 7 agreed that the flipped model improved challenged students' critical thinking skills. In the classroom, those students had more support with the critical thinking part where they asked questions in different ways or teachers can lead them to the answer. They developed their understanding of the concept being taught. Participant 8 stated, "one of the things I noted with the flipped classroom was, we spent more time on more challenging problems and develop critical thinking because of the class time that was freed up." For Participant 10, improving critical thinking skills could be a challenge for students; it depended on the type of disability. Contrary to other participants, Participants 1, 2, and 3 taught critical thinking to students with disabilities and students without disabilities in the same way. They used the same strategy for all students.

Another benefit of the flipped model identified by participants was that it supported students to learn the content. Interview question 9 helped to examine that benefit: "how does the flipped model support students with disabilities to learn the content?" Data collected from participants helped to answer this question and the second sub-research question. The flipped classroom model assists students with disabilities to learn the content. The teacher has more time to support those students. All participants agreed that the videos were great tools that supported students with disabilities: they learned from what they watch and took control of their learning. Participant 4 stated:

> I am no longer standing at the front of the classroom doing a live lecture and students are now engaged in learning activities. It allows me to be a facilitator and to navigate around the classroom space to check in with students individually or

to check all groups of students. So, students can also advocate for themselves as they are doing their coursework.

Participants 5, 7, 8, 9, and 10 mentioned that students learned the content by watching instructional videos at home to be prepared for the in-class activities. Those participants agreed that students used the playback function of their devices as well as the subtitles embedded in the videos to learn the content. They also indicated that pausing, rewinding, and rewatching the videos helped students with disabilities to learn. Two of those Participants were from Peru and three of them were from the USA They were four males and one female. Four had a high knowledge of the flipped classroom. Three of them were special education teachers, one of them was the math teacher and one of them was an English teacher. All participants had 7 to 8 years of experience except Participant 5 who had 2 years of experience. Participant 6 used PowerPoint as another way to support students to learn the content because it was more visual and worked well for students who may have difficulties with sensory processing. Participants 1, 2, 3, and 6 used different methods to support students in their learning. Those methods included using Google drive, the feedback to address students' issues, reteaching the concepts in class using face-to-face time, and giving students extra activities. None of those teachers were from the USA: one from Australia, one from Canada, and two from the UK; they were all males except one participant. Participant 1 had two years of teaching experience, Participant 3 had four years of experience, and Participants 2 and 6 had six years of teaching experience. In contrast, Participant 11 commented that the flipped model could be a challenge for students with disabilities if it was not well implemented; as an example, students who are struggling with reading should get more access to the

materials in ways that are easier for them to comprehend. Students with comprehension issues should get better-scaffolded classroom instruction. Participants' statements indicated that for a teacher, being able to respond to what students need in terms of their learning and in terms of their progress plays an important role in learning the content.

The last perceived benefit of the flipped model was the improvement of students' focus. Some students with disabilities with limited attention span received extra support in the flipped classroom model. This section explained strategies and applications used by the participants: To maintain the attention of students with disabilities, teachers used various strategies. Participant 1 taught them how to take notes, view videos, and had them work in 5-minute increments. Participant 2 kept students busy with various activities and videos. Participant 3 gained students' confidence with video content and kept them engaged. Participant 4 indicated that some students with disabilities struggled to focus. One method of support was to allow them to watch videos using headphones. The teacher redirected students and brought them back on track when their focus faded. Participant 5 used what he called "just-in-time" teaching to keep students focused. Participant 6 indicated that students who have issues with sensory processing or who have been diagnosed with attention-deficit/hyperactivity disorder (ADHD) or learning disabilities struggle to focus in the classroom. He continued by stating,

> the classroom environment itself can be incredibly de-motivating and boring or not interesting… I think this is an area that teachers are incredibly under-qualified for… I think that using technology helps students with different sensory processing needs.

According to Participant 7, it was difficult for students to sit still if they had Tourette syndrome or ADHD. They may have to focus on the videos and not be concerned about anything else. Participant 8 mentioned that students with disabilities, especially those with ADHD, had issues focusing during class. There may be less distraction at home compared to school, where there are many students in the classroom. Those students could not easily focus without their teacher's support. Reminding students to focus on the instruction to do well on the test was the strategy used by Participant 9. Participant 10 noted that some students with disabilities have a limited attention span and can focus only on engaging activities. Participant 11 used a program called Edpuzzle to prepare the lesson with the quizzes embedded as well as short videos to maintain students' attention. Based on participants' statements, each teacher implementing the flipped model used different strategies to support students with disabilities who lacked focus during the instruction. What all participants had in common was that they kept students busy to boost their attention.

The patterns found while discussing the benefits of the flipped model were related to the subjects that participants taught. English teachers mentioned that the video helped students to learn and practice the language before coming to school. The in-class session allowed students to receive more help, especially in writing. Science, math, and chemistry explained that with the flipped classroom, students had more time for experiments in the classroom; their motivation to learn was boosted because they controlled their learning.

The two themes discussed above namely how teachers appreciated the flipped classroom and the benefits of the flipped model answered the first research sub-research

question: the statements from participants indicated that almost all participants had a positive appreciation of the flipped classroom. The benefits of the flipped model as commented by those participants included the improvement of the collaboration among students, more autonomy for students in their learning, amelioration of critical thinking skills, support of students to learn the content, and support of students who lack focus,

The second sub-research question was, what are teachers' perceptions about managing a flipped classroom? The themes identified to answer this question included:

- classroom management and support for students with disabilities
- accommodations used to support students with disabilities

**3. Classroom Management and Support for Students with Disabilities**

This theme encompassed two sub-themes: students with behavior issues and students' motivation.

Dealing with students' disruptive behavior was an important component of classroom management. Participants shared their strategies on how to support students with disabilities who display some behavior issues. The answers from participants addressed the second sub-research question. The flipped model could support students with disabilities with behavior issues. Interview results indicated that participants have different strategies for managing behavioral issues. What all participants had in common to manage students' behavior was that they kept those students engaged in-class activities with clear expectations. They also involved parents and communicated with them. Almost all those participants indicated that they built a strong relationship with students and make them comfortable. Participants 4, 6, and 7 used identical strategies to manage students' behavior: they took away privileges from students misbehaving, encouraged

them to fix their behavior, and rewarded them with tangible items for good behavior. Participant 7 noticed that some students misbehaved when they were bored with the lecture. He indicated that hands-on activities decreased the behavior issues. The design of the classroom had an impact on students' behavior. In the classroom, the teacher should be able to see all students easily. Participant 5 indicated that the way he organized the class helped to manage the behavior. How the lesson is prepared and implemented can influence students' behavior. If the concept being taught is complex, the teacher should find a way to make students understand it. Participants 8 and 10 agreed that students misbehaved when they did not understand the concept taught through direct instruction. The use of videos mitigated the situation because those students had a limited attention span. The misbehavior also decreased when the teacher redirected students, encouraged them to focus, and provided them with regular feedback. notetaking kept students busy and helped to decrease misbehavior. Participants 1 and 3 indicated that they did not make any distinction between students with disabilities and students without disabilities while dealing with the behavior in the classroom.

While examining participants' statements, it appeared that teachers with less experience were struggling to manage students' behavior in the classroom whereas teachers with more experience were doing well with managing students' behavior. Participants 1 and 5 with just two years of experience were considered as less experienced teachers. Participants with more than two years were considered as teachers with more experience. Participant 1 stated, "my biggest challenge is to deal with students with an emotional behavior disorder, especially to bring them back to work when they are acting out." In contrast, Participant 10 who had taught for the last 8 years mentioned, "I

am comfortable with the management of my students' behavior; I use different methods to calm my students down and control their behavior". This was an indication that classroom management has a connection with teachers' experience.

Students' motivation was another component of classroom management. The statement from participants showed that each teacher has a specific way to motivate students to learn. Some strategies participants used to motivate students included short engaging videos, incentives, and positive reinforcement. Nine out of 11 participants allowed students to use their computer to watch videos on YouTube or play games as an incentive when they completed their assignments. The two teachers who did not use YouTube were from Peru. They indicated that it was due to the internet connection. Another incentive that motivated students was "the student of the month": each month, teachers will select and reward the best student based on his or her hard work. As far as positive reinforcement is concerned, almost all participants agreed that students were motivated when they receive compliments for their work. Seven out of eleven participants called parents or sent them emails to inform them when students did a great job. Parents also played an important role in students' motivation: All veteran teachers acknowledged that the involvement of parents in the instruction motivated students with disabilities: parents were exposed to the videos the students were watching at home and could encourage them to learn. Also, students were more motivated when they took control of their learning; their motivation was boosted when they saw their strengths and weakness and became eager to see their progress. Participants with just 2years of experience mentioned that they did not work with parents. Students were motivated when they felt that they were valued:  Participants 3, 6, and 8 said that students are motivated

when they are given the opportunity to display their skills. Students were motivated when they saw a direct connection between their effort and their progress. Participant 4 used a unique way to motivate students while recording the video. She stated,

> I try to teach through the screen. I make eye contact with the camera. When I am making an individual screencast for a student, I mention the name of the students even if they are not in the room. When they watch the video, it still creates a sense of personal connection.

Overall, what motivated students the most was to reward them with computer time to play videos or games after they completed their assignments.

**4. Accommodations Used to Support Students with Disabilities**

In this study, inclusion meant that students with disabilities worked alongside their peers without disabilities. Participants perceived inclusion as a motivation for students with disabilities because those students were challenged and supported by other students without disabilities. In a classroom with students with disabilities, the accommodation of students with disabilities is an important component of classroom management. Some variations were found while examining teachers' attitudes toward accommodation: Some general education teachers had a positive attitude about students with disabilities working with other students without disabilities; they treated them equally but accommodated students with disabilities. Other general education teachers had a negative attitude toward working with students with disabilities because it required extra work. Special education teachers overall had a positive attitude toward working with students with disabilities in a general setting because of their training. Based on

participants' statements, students with severe disabilities needed more accommodation than students with mild to moderate disabilities. No patterns were found in the subject area.

Accommodations are mandated for the instruction related to students with disabilities. All teachers in the United States, the United Kingdom, and Canada fully implemented the accommodation for students with disabilities as required by the law. Participants from Australia and Peru indicated that teachers sometimes found a way to avoid the implementation of the accommodation without consequences. To address the issue concerning those accommodations, interview questions 4 and 5 were asked, "describe any accommodation you use for students with disabilities when implementing the flipped classroom. How does that accommodation support students with disabilities in the flipped classroom?" The answer to these questions also served as the answer to the second sub-research question. What was commonly used by all participants to accommodate students with disabilities was that that they gave extra time to those students to complete their assignments. Participants 1, 4, and 8 had in common the use of closed captioning on videos available through YouTube so that students not only listened but also saw the words on the screen. They adjusted the size of the videos for each student. What Participant 1 did differently was to watch videos with students who were struggling, model how to watch them, and demonstrate how to engage with the work. With that accommodation, students felt more supported and could take control of their learning; it increased their understanding of the lesson. Participants 2, 5, 7, 9,10, and 11 used similar accommodations to support students with disabilities: they asked students to highlight the text instead of writing down notes. For questions with multiple choices, they

reduced the number of choices. They also reduced the number of questions asked. Some students had to use pictures instead of words: they pointed to the correct pictures to answer questions. No pattern was identified among those participants. Participant 3 accommodated disabled students by using the appropriate font for PowerPoint. Videos were designed in a format that can easily be watched and students can change the screen color. While watching those videos, students had to use the headphone to focus. What differentiated Participant 3 from the others was that he made short videos or chunked the content into several short videos instead of one long video

Teachers from the United States, Canada, United Kingdom, and Australia indicated that they strictly implemented the accommodation while teaching students with disabilities. Participants from Peru mentioned that the legislation in their country was flexible and not always enforced to accommodate students with disabilities.

While dealing with the classroom management some variations and commonalities were found: The classroom management varied from participant to participant. What all participants had in common was that they took into consideration the individualized education program (IEP) of each student. They used almost the same accommodation: students with disabilities have extra time to complete their assignments. Those participants also agreed on the uniqueness of each student and consider it in classroom management. As far as the accommodation is concerned, the participants used different approaches: students with disabilities were given extra time to finish their assignments. For multiple-choice questions, their choices were limited. Some participants allowed students just to highlight the answers or to point at them, depending on the student's disability.  In sum, although participants had different strategies for creating

accommodations, they all felt that thoughtful accommodations were key to their students' success.

## Summary

This chapter described the setting of the study and the 11 participants, who were from various countries including the United States, Australia, United Kingdom, Peru, and Canada. They were all high school teachers using the flipped classroom model. The data collection lasted 3 months. As described in Chapter 3, there were no departures from protocol or unusual circumstances during data collection.

Temi software was used to transcribe the interview; the application Dedoose helped to organize interview questions into themes. This chapter explored teachers' perceptions about how the management of the flipped model could be used to support students with disabilities to learn the content, improve their critical thinking, stay motivated and focused, and control their behavior. It also focused on the perceived benefits of the flipped model for students. Finally, this chapter examined how accommodations could be used to support students with disabilities.

The main research question was: what are teachers' perceptions regarding the implementation of the flipped classroom model in an inclusive high school setting? The first sub-research question was: How well informed are teachers about the appropriate and effective use of the flipped classroom model in inclusive settings? The answer to this question was summarized in two findings. The first finding indicated that all participants with more than two years of experience were well informed about the flipped classroom model and knew how to use the flipped classroom appropriately and effectively in inclusive settings. Participants with less than two years of experience were struggling to

understand the concept of the flipped classroom. Almost all participants had a positive appreciation of the flipped classroom. The second finding was related to the benefits of the flipped classroom. Based on participants' statements, the flipped classroom fostered collaboration among students and teachers. The flipped classroom also gave more autonomy to students and placed them at the center of their learning. The flipped model developed students' critical thinking skills, supported those who lacked focus during the instruction and supported students to learn the content.

The second sub-research question was, what are teachers' perceptions about implementing and managing a flipped classroom in an inclusive setting? This research question was answered in two parts: the classroom management and support for students with disabilities and the accommodation used to support students. Classroom management encompassed the management of the behavior and students' motivation. Participants in their statements indicated that they used various strategies to manage students' behavior. Those strategies included involving parents, taking away privileges from students misbehaving, and rewarding those with good behavior. To motivate students to learn, participants used short engaging videos. They also used positive reinforcement.

Chapter 5 focuses on the interpretation of the findings, limitations of the study, recommendations, and implications.

# Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this qualitative research was to examine high school teachers' perceptions of the flipped teaching classroom model within an inclusive classroom. This study provided information on how the flipped classroom model supported students with disabilities working alongside their peers without disabilities. A generic qualitative design was used to conduct this study. Eleven participants from various countries were interviewed. The following were the key findings: most of the teachers interviewed had a positive attitude toward the flipped model. The flipped classroom could be used to increase students' motivation to learn. Teachers could also use the flipped model to improve their classroom management. Similarly, those teachers perceived this system as a means that could be used to support students with disabilities to learn the content, improve their critical thinking, stay motivated and focus, and control their behavior. Among other perceived benefits of the flipped classroom, teachers reported that students in flipped classrooms can:

- take control of their learning
- learn at their own pace by watching videos, pausing them, and re-watching them as needed
- support each other

Teachers used various accommodations to assist students with special needs. Those accommodations included extra time for students to complete their assignments, videos with captions, and videos with the appropriate format for all students. This last chapter is organized around five sections: interpretation of the findings, limitations of the study, recommendations, implications, and conclusion.

## Interpretation of the Findings

The study's primary research question was: What are teachers' perceptions regarding the flipped classroom model in inclusive high school settings?

The study's secondary research questions were:

RQ A. How well informed are teachers about the appropriate and effective use of the flipped classroom model in inclusive settings?

RQ B. What are teachers' perceptions about implementing and managing a flipped classroom in inclusive settings?

This section includes the interpretation of the findings in two parts. The first part describes how the findings are aligned or not aligned with the literature review indicated in Chapter 2. The second part of this section focuses on analyzing and interpreting the findings through the lens of the CBAM, which served as the conceptual framework.

### Findings and Current Literature

The first sub-research question asked, how well informed are teachers about the appropriate and effective use of the flipped classroom model in inclusive settings? The inclusive setting is a setting where students with disabilities work alongside their peers without disabilities. Results from the data analysis indicated that all 11 participants had at least 2 years of experience with the flipped classroom model. Participants 1 and 5 were teaching for 2 years and were considered as least experienced teachers; they were still working to understand the flipped classroom. Other participants had more than 2 years of teaching experience. They mentioned that they were well informed about the appropriate and effective use of the flipped classroom in inclusive settings. All participants acknowledged that the collaboration kept students engaged in their learning, which

confirmed the research about collaboration by Osgerby (2013). All participants agreed that the education of students with disabilities represented a challenge for various reasons: most participants reported that their students with disabilities lacked focus and struggled to pay attention to the content. The participants noted that their students lacked motivation, had limited attention span, displayed some behavior issues, and needed extra support to be successful. The implementation of accommodations allowed students with disabilities to elevate themselves; it helped to close or reduce the gap between them and their non-disabled peers. Participants explained how they used the flipped model to support students with disabilities: when students lacked focus and could not pay attention to the content, they could be motivated, they might resist. The attention to the content, motivation, behavior, and accommodation of students with disabilities were the four main findings and are detailed below.

Participants used various strategies to keep students focused on the content. First, teachers transferred part of their role to students. They placed them at the center of their learning and became facilitators. Students felt more responsible when they realized they had the responsibility of their education. The transfer of responsibility to students reduced their resistance to learning. This finding aligned with the second pillar of the flipped classroom related to learning culture (Yarbro et al., 2015). The third pillar of the flipped classroom related to intentional content indicated that the instructor chose what to teach and the tools students should use independently (Yarbro et al., 2015). How participants were using the flipped classroom confirmed this third pillar.

The second strategy for teachers was to create educational videos and make them available to students. To keep students focused, participants made them watch short,

engaging videos related to the content and let them work in 5-minute increments, and they redirected them on the instruction when their attention was fading. Some of the participants used Edpuzzle with quizzes embedded in the lessons. Students could work at their pace by watching those videos at home, pausing, and rewinding them several times before going to school. Those videos also helped absent students because they had access to those videos at any time. In class, students and teachers had enough time to work on critical thinking skills and other skills. Teachers differentiated the lessons to meet each student's needs.

The third strategy was to provide students with immediate feedback. Teachers reacted to students' performance and helped them to improve. This encouraged students to stay focused on the content. This finding confirmed the studies conducted by Ghaderi and Farrell (2020).

Another finding was the motivation of students with disabilities. The motivation was one of the components of the theme related to classroom management. Participants revealed that in addition to the short and engaging videos, they involved students in a variety of activities. Students were motivated when they realized that they were in charge of their education. The involvement of parents in their children's education also boosted their motivation. Positive reinforcement was another tool used by teachers to keep students motivated. Some participants used a reward system, such as the student of the month, to motivate their students. The motivation of students was considered as an extension of the knowledge of the research.

The relationship between the flipped classroom model and the behavior of students was another finding. As previously explained, one of the research themes was

how teachers manage the flipped classroom. That theme encompassed both behavior and motivation. Participants felt that students misbehaved because they could not understand the concept, were bored, and found no interest in the instruction. This is a call to the restructuring of the teaching method. The lessons should be accessible to students, easy to understand, and mixed with fun activities. The relationship the students built with their teachers might also impact their behavior.

The last finding was related to the accommodations of students with disabilities. Participants described several types of accommodations, such as asking students to highlight the text instead of taking notes, reducing the number of choices on multiple-choice questions, providing extended time on assignments, and allowing students to substitute words with pictures to answer questions. In addition, several participants used closed captioning for videos or automated text to speech, providing content in multiple formats. These accommodations were important components of the education of students with disabilities. The accommodations served to compensate for their disabilities and allow that category of students to succeed. Teachers must ensure that accommodations are implemented for students with disabilities so that they can use and understand the material provided to them. Basham et al. (2016) found that without accommodation, learning for students with disabilities might be ineffective; their research aligned with participants' perceptions.

**Findings and Conceptual Framework**

Teachers' perceptions about using the flipped classroom in inclusive settings were positive. Although all participants welcomed the new concept of the flipped model, Participant 10 indicated that some veteran teachers displayed anxiety and resistance to

change because they did not want to deal with technology or a new way of doing things. The findings focused on two aspects: the management of the flipped classroom and the collaboration. Participants shared their perceptions on how to manage the flipped class to help students focus on the content, stay motivated, and improve their behavior. It emerged from the analysis that good management of the flipped classroom could lead to the improvement in the performance of disabled students. As far as the collaboration was concerned, the collaboration between teachers became necessary to facilitate their work so that they could share their videos. It was quite often difficult to find prearranged videos

The findings detailed in this chapter were guided by the framework described in Chapter 2, the CBAM. This concept was related to the implementation or introduction of new technology. Concerns are not necessarily fears, anxieties, or worries, but rather how new systems are perceived and how that perception affects their use and consequences (Hall & Hord, 2011). CBAM explains the process of change, how people react to change, and how to make sure that the change is implemented successfully. Masarweh (2019) identified seven stages of CBAM. Those stages included awareness, informational, personal, management, consequences, collaboration, and refocusing.

At the awareness stage, participants showed little interest in using the technology. In connection with the flipped classroom model, interviewees expressed this concern when they were hired in the new school implementing the flipped model or when the flipped model started in their school.

At the informational stage, participants paid more attention to the use of technology and wanted to know more about it. Those participants mentioned in different

words that when they were aware that using the flipped classroom model required some technology knowledge, their concern became what technology to use and how to use it.

The third stage of CBAM is personal. At this stage, participants had to be trained to use the technology or use the skills they already had. The findings indicated that the flipped classroom teachers attended the professional developments to improve their knowledge of the flipped classroom model.

The fourth stage of CBAM relates to management focused on methods and tasks concerning the use of educational technology. Teachers mentioned that to implement the flipped classroom, they used a computer, various applications, and programs such as Edpuzzle, PowerPoint, and devices to create videos.

The fifth stage of CBAM is about consequence. Participants' concern at this stage was the impact of educational technology on students' results.

The sixth stage of CBAM is collaboration. All participants interviewed agreed that collaboration among teachers was important for a successful implementation of the flipped classroom. Teachers shared the lessons they prepared; their main concern was that some of them were reluctant to work together.

The last stage of CBAM is refocusing. At this stage, participants shared that they explored new ways to take more advantage of the use of technology.

The behavior and levels of use described in Table 3 helped to understand the findings; at the initial stage of the implementation of the flipped classroom model, participants took limited actions because the concept was new. As they progressed in the implementation of the model, they wanted to know more about the model and got ready to use it. During the implementation of the flipped model, they identified possible

mistakes, made adjustments to improve it, and finally sought a possible alternative to make it effective.

## Limitations of the Study

This study had some limitations. The first limitation was that the research was impacted by the coronavirus pandemic; all schools were closed. Teachers and students were using distance learning instead of the flipped classroom. The flipped classroom means that students are watching instructional videos at home to be ready for their lesson and complete their homework in class. In the interview process, I ensured that only teachers using the flipped model before the pandemic were interviewed. The limitation remained because teachers and students were not meeting physically in class for instruction.

The second limitation was the interview itself. It was conducted via phone or Zoom call, which made it difficult to appreciate the body expression of the interviewees. Observing body language during the interview would normally help the interviewer evaluate the sincerity of the interviewee.

The third limitation of the study was the sample size. Eleven high school teachers using the flipped classroom model were interviewed. Those teachers were from various countries. The diversity of participants gave some strength to this study. However, the outcome of the research could not be generalized because of the limited number of participants; also, a limited number of countries have implemented the flipped classroom model to date. In addition to the sample size, the study was limited to teachers' perceptions and self-reports. Moreover, the research did not use triangulation to have others' perspectives such as the school administration and students' viewpoints.

Classroom observation and access to students' test scores could have helped to appreciate the effectiveness of the flipped classroom model. The observation was not possible because the research was conducted during the pandemic.

The fourth limitation was that my perception of the results might be biased; I do have a background in special education. I have been teaching students with different types of disabilities in an inclusive setting for the last 8 years at the elementary level. That personal background could influence how I approached the data analysis.

## Recommendations

Based on the literature review in Chapter 2, the findings, and the limitations of the study, the following recommendations were made to future researchers, teachers, students, parents, school administrators, and decision-makers.

### Recommendations to Future Researchers

This basic qualitative study helped to explore high school teachers' perceptions about using the flipped classroom model in inclusive settings. The concept of the flipped classroom remains unknown to various school districts in the United States and around the world. It is difficult to make a general statement about its success or failure. There is limited literature related to the flipped classroom model. More research is needed to make data available to the public about that instructional method. Future researchers may explore:

- Obstacles related to the expansion of the flipped classroom; for example, in the United States, some parents are so powerful that they can prevent any change from happening in education.

- Reasons why some teachers are reluctant to adopt the flipped classroom model and how to overcome the challenge.
- The role of school staff in the successful implementation of the flipped model.

**Recommendations to Teachers**

This research enhanced my understanding of the flipped classroom; it also explored how that model could be used to support students with disabilities. The first recommendation is that teachers should label the lesson and not students. Labeling the lesson eases its understanding but labeling students may contribute to their failure. Some students with ADHD or autism, for example, struggle to focus. It would be a mistake to give up teaching them because, with proper support, they could develop skills to mitigate their disabilities.

The second recommendation is that teachers, especially veteran teachers, should not fear using technology. Teachers may fall behind if they resist the introduction of a new concept dominated by technology. The flipped classroom uses technology extensively.

The third recommendation is to encourage teachers using the flipped classroom model to join various groups on social media. Those groups allow teachers to interact and share their ideas.

**Recommendations to Students**

Students with disabilities should be aware that with the flipped classroom model, they are at the center of their learning, which means they take on more responsibility. They should not limit themselves because of their disabilities. Rather, they should turn their disabilities into abilities. They should learn to overcome their challenges and

overturn all negative prejudices that surround them. They need to remember that the state of mind defines who they are.

### Recommendations to Parents

Parents are important partners in education. The flipped classroom model allows them to watch the instructional videos at home with their children. Students' motivation may be boosted if they see their parents involved in their education. Students spend most of their day with their teachers. The portion of the time they spend with their parents should be used to support and encourage them to learn.

### Recommendations to School Administrators

The first recommendation to school administrators is that they should organize professional development regularly. It improves teachers' skills and equips them to meet their students' needs. The flipped classroom is a rapidly expanding model. It uses techniques that change daily. Teachers and schools who do not adapt to the evolution of these techniques will be left behind.

## Implications

This qualitative research highlighted high school teachers' perceptions of using the flipped classroom to support students in inclusive settings. This section describes the flipped classroom method's potential positive social change with regards to greater inclusion and improved academic outcomes and its theoretical implications.

### Potential Impact for Positive Social Change

Each research work should bring something new to our knowledge and solve specific problems. Kleist and Wright (2017) explained that social change happens when people work as a team to improve the community. This study has a potential impact on

positive social change at different levels including teachers, students, parents, and schools.

At the teachers' level, participants agreed that the flipped classroom innovated their way of teaching. Their role is switched. They put students at the center of their learning and become facilitators. This teaching method freed time for in-class activities and allowed teachers to focus on students' specific needs.

At the students' level, participants noticed that the flipped model gave students more responsibilities for their learning. Moving students from direct instruction to student-centered instruction empowered students and gave them more opportunities to learn. With the flipped classroom model, students have more autonomy.

Parents play an important role in students' education. Participants agreed that when parents monitored students at home and encouraged them to complete their assignments, their school performance improved. The social change of the flipped classroom stemmed from the atmosphere it created at home, with the parents supervising their children's work while learning with them.

Finally, the implementation of the flipped classroom model has already led to a change in schools. Byron High School was an example of a school where the flipped classroom model was used with success. Woodland Park High School was another example of a school implementing the flipped classroom (Bergman & Sams, 2012).

**Theoretical implications**

The theoretical framework for this study was the concerns-based adoption model (CBAM). That model helps to understand people's concerns when they are facing a change as well as their perception of the change. Through the CBAM perspective, high

school teachers indicated that the flipped classroom was an innovative concept that revolutionized the education of students with disabilities.

## Conclusion

The problem that led to this study was the lack of research related to high school teachers' perception of using the flipped classroom in inclusive settings. The purpose of this basic qualitative research was to fill that gap by studying high school teachers' perceptions of the flipped teaching classroom model within an inclusive classroom. This study demonstrated how the flipped classroom model supports students with disabilities working alongside their peers without disabilities. The concerns-based adoption model (CBAM) served as a theoretical model and helped to organize the data. Eleven high school teachers using the flipped classroom model in inclusive settings were interviewed; they shared their knowledge of the flipped classroom and their perceptions about managing the flipped classroom.

The findings from this study indicated that although some students with disabilities struggled to focus, their teachers perceived the flipped model as effective for those students. Study participants agreed that the flipped classroom supported students with disabilities to learn the content; it also helped to improve their critical thinking skills, their motivation, focus, and behavior. Teachers indicated that the flipped classroom had some benefits for students with disabilities: students could learn at their own pace, they had the opportunity to pause the videos and re-watch them several times, and they received support from their peers without disabilities. Implementing accommodations and modifications was crucial for the success of students with disabilities in the flipped classroom. With accommodations, teachers changed their

teaching and materials to meet the needs of students with disabilities. Research participants also noted that their collaboration with parents was another important factor for the successful application of the flipped model. Parents at home played an important role in the success of the flipped model for students with disabilities by monitoring them and encouraging them to learn.

The outcome of this study contributed to social change by providing decision-makers and stakeholders with evidence-based information to make sound decisions to support high school students in inclusive settings.

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# Appendix: Interview Questions

1. Describe your knowledge of the flipped classroom. For how long have you implemented or have you been implementing the flipped classroom?
2. Describe how you perceive the flipped classroom model in inclusive high school settings. The inclusive setting meaning a setting where students with disabilities work alongside their peers without disabilities.
3. How does the flipped classroom model support students with disabilities in your classroom?
4. Describe any accommodation you use for students with disabilities when implementing the flipped classroom.
5. How does that accommodation support students with disabilities in the flipped classroom?
6. Describe how you perceive the implementation of the flipped classroom model in inclusive high school settings.
7. What is your perception about managing a flipped classroom in inclusive settings?
8. How do you perceive teachers' collaboration in using the flipped classroom in inclusive settings?
9. How does the flipped model support students with disabilities to learn the content?

10. How does the flipped model support students with disabilities in ameliorating their critical thinking?
11. How do you use the flipped classroom model to support students with disabilities who lack the motivation to learn during the instruction?
12. How do you use the flipped classroom model to support students with disabilities who lack focus during the instruction?
13. How do you use the flipped classroom model to support students with disabilities who display some behavior issues?
14. What do you perceive as the impact of using the flipped classroom model to support students with disabilities working alongside their peers without disabilities?
15. What do you perceive as the potentials of using the flipped classroom model to support students with disabilities working alongside their peers without disabilities? Otherwise, what are some possible benefits of the flipped classroom for students with disabilities working with their peers without disabilities?
16. What have I left out that you think is important?

    Thank you for participating in this interview.