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Teaching during the COVID-19 pandemic: Investigating the impact on teacher's sense of efficacy

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ABSTRACT
This study examines how teaching during the COVID-19 pandemic impacted teacher efficacy. The study employed the survey research design, using a sample of 59 Historically Black Colleges and Universities (HBCU) instructors/teachers. The study seeks to answer the research question: How did teaching during COVID-19 impact teachers' sense of efficacy as measured by the Teachers' Sense of Efficacy Scale (TSES) by Tschannen-Moran and Woolfolk? Data was collected through simple random sampling using the Teachers' Sense of Efficacy Scale (TSES) by Tschannen-Moran and Woolfolk, (2001) and was analyzed using crosstabulation analysis. The findings from this study differ from the findings of previous studies as it shows no difference between the efficacy of teachers who taught virtually and teachers who used the hybrid mode of teaching during the COVID-19 pandemic as they all had low beliefs about their efficacy for student engagement and instructional strategies.

Keywords: COVID-19, Teacher Efficacy, Distance Learning, Hybrid Learning, HBCU

School closures due to viral outbreaks are not a new thing. School closure has been used in the past as a mitigation strategy to reduce the transmission of viruses during outbreaks (Simon et al., 2009). It is a non-pharmaceutical intervention strategy that has received so much attention from the media, the research community, the public, and also policymakers (Stern et al., 2010). While school closures reflect different strategies and also help in slowing down transmission, it has also been associated with social, educational, and economic costs (Cauchemez et al., 2014). The emergency closure of schools during pandemics or outbreaks of infectious diseases has often been used in the past as a Public Health intervention to limit the spread of infections (Brooks et al., 2020). According to Bayham and Fenichel, (2020, P. e271), "School closures are some of the highest-profile social (physical) distancing measures used to slow the spread of an infectious disease... The benefit of closing schools during an epidemic is to reduce transmission and new cases". By mid-April 2020, schools had been closed in over 192 countries due to the COVID-19 pandemic affecting about 1.6 billion students (Donohue & Miller, 2020). This forced most schools to offer remote/distance learning (Tsolou et al., 2021). With the "COVID-19 push", many teachers had to adopt online, virtual, and hybrid modes of instruction which they were previously unfamiliar with (Coyne, Ballard & Blader, 2020; König et al., 2020; Ma et al., 2021).

The transition from traditional face-to-face teaching to distance/remote learning according to existing literature has had an impact on Teacher Efficacy. For example, a study carried out by Swanson and Swanson (2022), focused on investigating teachers' sense of efficacy of Language teachers during the COVID-19 distance learning found that COVID-19 distance learning impacted efficacy. Another study conducted by Pressley (2021), to examine Teacher Efficacy in elementary school teachers during the COVID-19 distance learning showed lower teacher sense of efficacy scores for elementary teachers who taught virtually due to the COVID-19 pandemic compared to the teacher sense of efficacy scores. Another study that looked at teachers' sense of efficacy during the COVID-19 pandemic for both elementary and secondary school teachers showed lower efficacy scores in both instructional strategy and student engagement. The study also revealed that teachers who taught virtually had lower efficacy scores compared to teachers who taught using the hybrid mode of teaching (Pressley & Ha, 2021). This study contributes

similarly to literature on teaching during the COVID-19 distance learning by investigating the impact of teaching during COVID-19 on teachers' sense of efficacy of Historically Black Colleges and Universities (HBCUs) teachers. While there have been studies conducted to examine teacher efficacy during the COVID-19 distance learning in various educational institutions, there are no studies that have been conducted to investigate how the adoption of technology in teaching and learning during the COVID-19 pandemic impacted Teacher's Sense of Efficacy in an HBCU institution. This study, therefore, plans to fill this existing gap thus serving as a bridge in literature. To explore the impact of COVID-19 distance learning on teacher's sense of efficacy, the research question under investigation is: How did teaching during COVID-19 impact teacher's sense of efficacy as measured by the Teachers' Sense of Efficacy Scale (TSES) by Tschannen-Moran and Woolfolk, (2001)?

Literature Review

Teacher Efficacy and Technology

Pedagogy during the COVID-19 distance learning looks into how students are engaged online, how online classrooms are managed, and how different instructional strategies are employed for online instruction. As observed in existing literature, before the COVID-19 pandemic, many schools lacked virtual learning platforms/technologies, many faculty members lacked distance learning training and did not have the skills required for distance learning (Coyne, Ballard & Blader, 2020). A study carried out by Koehler et al. (2013, p. 60) stated that "Social and institutional contexts are often unsupportive of teachers' efforts to integrate technology use into their work. Teachers often have inadequate (or inappropriate) experience with using digital technologies for teaching and learning. Many teachers earned degrees at a time when educational technology was at a very different stage of development than it is today. Thus, it is not surprising that they did not consider themselves sufficiently prepared to use technology in the classroom and often did not appreciate its value or relevance to teaching and learning. Acquiring a new knowledge base and skill set can be challenging, particularly if it is a time-intensive activity that must fit into a busy schedule" (Koehler et al., 2013, p.60). With the "COVID-19 push", many institutions had to adopt online/virtual learning technologies really quickly and train their staff on how to use these technologies. These trainings were also time-sensitive due to the abrupt nature of the transition to distance learning and it had to

fit into their busy schedule. (Coyne, Ballard & Blader, 2020; König et al., 2020; Ma et al., 2021) .

The COVID-19 pandemic put teachers in a unique situation as teachers faced challenges in supporting student learning during the COVID-19 pandemic. Teachers also faced challenges in adapting to online instruction, these challenges varied depending on the teachers' technological abilities/digital skills, and access to technological infrastructures such as Zoom, Blackboard Collaborate, Microsoft Teams, Google Hangouts, etc. (Kim, 2020). Scherer et al. (2021) conducted an analysis to profile teachers' online readiness for COVID-19 online learning. The results from their study show that teacher readiness is a multifaceted construct especially when it comes to online learning as the background of teachers and their experience with online learning affects their readiness. Results from a study on the relationship between technological pedagogical content knowledge, school support, and technostress reveal that teachers' technological pedagogical content knowledge and school support predict their technostress levels (Özgür, 2020). Technology's integration into education is very important as it provides engaging teaching and learning experiences for both teachers and students (Thohir et al., 2020). A study that examined the relationship between Technological Pedagogical Content Knowledge and occupational anxiety for prospective teachers found that Technological Pedagogical Content Knowledge affected occupational anxiety by 62% (Uyanık et al., 2019). Another study conducted to assess COVID-19 distance learning, teachers' experiences of stress, and their strategies for coping found a positive association between COVID-19 distance learning with medium to high levels of stress among teachers with a majority of teachers experiencing technical barriers due to a lack of technological skills (Federkeil et al., 2020). It is therefore evident that teachers' technological skills have an influence on their stress levels during the transition to online/hybrid learning. König, Jäger-Biela, and Glutsch (2020) conducted a study to analyze the potential factors such as school computer technology, teacher technological pedagogical knowledge on teacher competence. Findings from their regression analysis found that information computer technology (ICT) tools especially teacher digital competence and opportunities to learn digital competence are key instruments to adapting to online teaching during the COVID-19 pandemic. Their study also found that teachers who already had the

technological infrastructures provided by their schools and were familiar with them were at an advantage when schools closed due to lockdowns.

Hybrid & Virtual Instruction during COVID-19

With the closure of schools due to the COVID-19 pandemic, schools were forced to offer remote/online learning and later hybrid learning (Tsolou et al., 2021). Both virtual and hybrid learning aim to provide pedagogical freedom through access to education beyond the boundaries of a classroom (Raes, 2022). While hybrid learning combines face-to-face instruction with online/virtual instruction, virtual/online learning is learning done on a web-based platform (Bennett, Knight, & Rowley, 2020). Hybrid and virtual learning have seen significant changes in the past couple of years. Hybrid learning benefits from the advantages of traditional face-to-face learning while also taking advantage of the flexibility of online learning (Singh, Steele, & Singh, 2021). With the COVID-19 pandemic the challenge for teachers and students with regard to virtual learning has included difficulties in how to use software for online learning, time management issues, the rapid transition to online learning, limited or no training on how to teach online (Singh et al., 2021). Virtual learning has been praised for its flexibility in the ease of administration and accessibility to learning materials (Mukhtar et al., 2020). Despite the benefits of virtual learning, it is not without challenges. A study conducted in 2021 revealed some barriers to virtual learning during COVID-19, these barriers included technological barriers and institutional barriers (Khobragade et al., 2021).

Research shows that students who enroll in blended/hybrid courses have better academic outcomes than students enrolled in traditional face-to-face courses or online courses (Namyssova et al., 2019; Vonti & Grahadila, 2021). A study conducted PreCOVID-19 that explored student engagement in higher education showed that students who took more online courses in qualitative reasoning engaged less in collaborative learning. This study has an implication for teachers by encouraging teachers to use instructional strategies that encourage student engagement (Dumford & Miller, 2018). Findings from a study that examined teacher efficacy for online teaching during COVID-19 for secondary school teachers revealed that teachers with prior experience in teaching online or teachers who had undergone professional development for online learning had higher teacher efficacy scores (Dolighan & Owen, 2021). Another factor that, according to research, impacted teachers' self-efficacy during

the COVID-19 pandemic was their self-perceived instructional competence (Pellerone, 2021). Research also suggests that a correlation exists between institutional/administrative support, institutional integrity and accountability, academic emphasis, and teacher efficacy (Woolfolk, Rosoff, & Hoy, 1990; Gillespie, 2022).

Methods

The study utilized the survey research design. The survey instrument used for this study is the Teachers 'Sense of Efficacy Scale. The Teachers 'Sense of Efficacy Scale (TSES) was designed by Tschannen-Moran and Woolfolk (2001). The TSES was designed to measure teachers' beliefs about their instructional effectiveness/efficacy. There are two types of TSES forms, the long form which is a 22-item instrument scale used to measure teachers' belief of their instructional efficacy, and the short form which consists of 12 items also used to measure teachers' belief of their instructional efficacy. The subscales of TSES include (a) Efficacy for instructional Strategies, (b) Efficacy for student engagement and c) Efficacy for classroom management. The TSES is a five-point Likert scale which was coded strongly agree=0, agree=1, neither agree nor disagree=2 disagree=3 and strongly disagree =4 where higher scores indicated greater efficacy belief. The TSES long-form shows validity and reliability in measuring teacher efficacy. Karbasi and Samani (2016) conducted a study to examine the validity and reliability of the TSES on an Iranian sample, from their findings, the Alpha coefficient for instruction self-efficacy, community involvement self-efficacy, positive school climate self-efficacy, and decision-making self-efficacy ranged from 0.77 to 0.85 and the Alpha coefficient for Test-retest reliability ranged between 0.77 to 0.83 making the TSES a reliable and valid instrument. Another study carried out to test the validity of the TSES on an Indian sample showed a reliability coefficient of 0.9446 and an intrinsic validity of 0.9719, proving the TSES to be a highly valid and reliable instrument (De Paul, 2012). In a study that explored the validity of the TSES in five countries: Korea, Singapore, Canada, Cyprus, and the United States. The TSES was once again proven to be a reliable and valid instrument for measuring Teacher Self-Efficacy beliefs in all five countries (Klassen et al., 2008). Both the Long and Short forms of the TSES have acceptable validity and reliability. Tefo (2012) used the TSES short form to measure teacher efficacy in Botswana. The study used Cronbach's Alpha and the Spearman-Brown Prophecy to test the

reliability of the TSES. The Cronbach's Alpha test results showed 0.782 for student engagement, 0.741 for classroom management, 0.802 for instructional strategies while the spearman brown prophecy test revealed 0.890 for instructional strategies, 0.851 for student engagement, and 0.878 for classroom management. Since both the long and short forms of the TSES have acceptable validity and reliability, this study will use the short form of the TSES which is made up of twelve (12) items.

The researcher used the G* power 3.1.9.7 software package to determine the sample size needed for this study. G* Power is a software program used to compute power analysis for many different statistical tests (Erdfelder et al., 2009). It covers many different statistical tests of the t, F, and $\chi 2$ test families. In addition, it includes power analyses for z-tests and some exact tests. G*Power 3.1.9.7 provides improved effect size calculators and graphic options, supports both distribution-based and design-based input modes, and offers all types of power analyses in which users might be interested (Faul et al., 2007). Using the G* Power software, the researcher used a significance level of 0.05 (which indicates a 5% chance of rejecting the null hypothesis when it is true, therefore a 5% chance of getting a wrong conclusion), and a statistical power level of 0.80 (the desired is typically 0.80 which indicates 80% probability that a Type II error will not be committed) and an effect size of 0.15, to get the sample size. The F-test results show that a minimum sample size of 55 is needed to carry out this research. A participant size of 59 was considered for the analysis of this study. With the help of the random sampling technique, the 59 participants were randomly selected to avoid from a population of teachers/instructors at Southern University A &M College Baton Rouge, an HBCU institution. With the help of SPSS 20.0, the collected data was analyzed using crosstabulation analysis.

Demographic Characteristics of Respondents

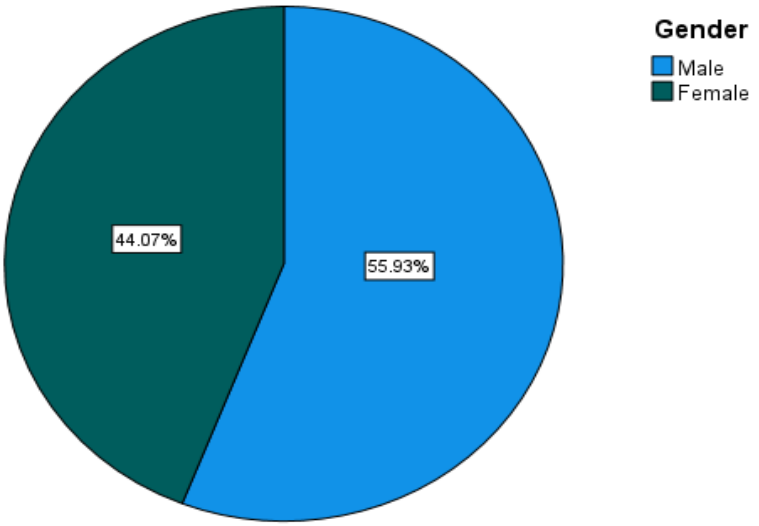

Figure 1: Gender of Research Participants
Source: Field data, 2021

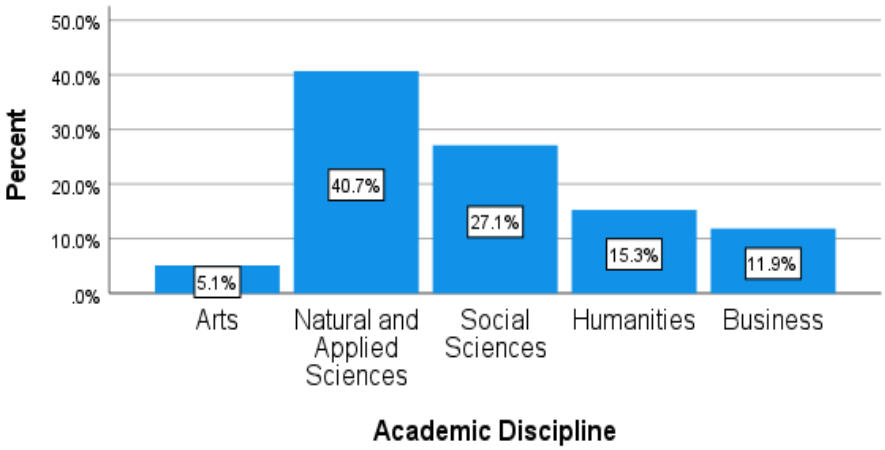

Figure 2: Academic Discipline Research Participants Teach-In.
Source: Field data, 2021

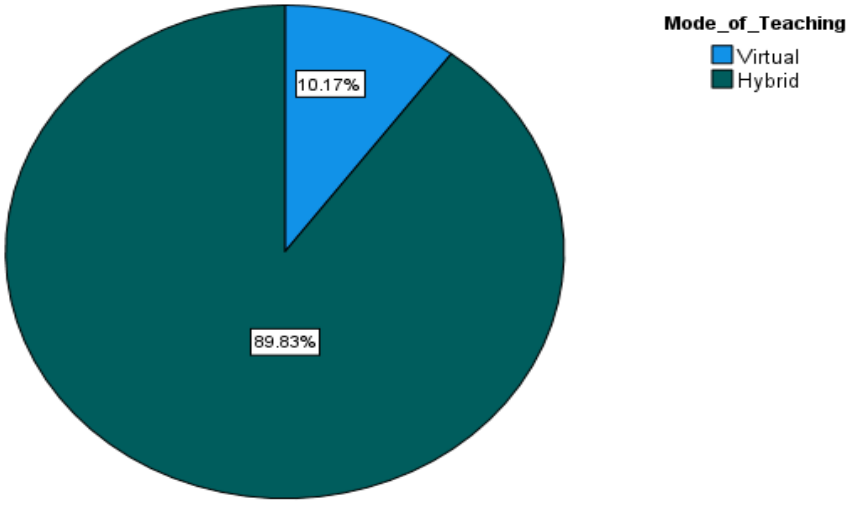

Figure 3: Mode of instruction/Instruction Used by Research Participants
Source: Field Data, 2021

Results

The Impact of the COVID-19 Distance Learning on Instructional Efficacy/Effectiveness.

TSES Item	Virtual Mode of Learning/Teaching					Hybrid Mode of Learning/Teaching				
	SA	*A*	*N A/D*	*D*	*SD*	*SA*	*A*	*N A/D*	*D*	*SD*
1. Could do very little to control disruptive behavior in the classroom	-	-	-		100 %	5.7 %	17%	28.3 %	32%	17 %
2. It was difficult to Motivate students who show low interest in schoolwork	-	100 %	-	-	-	3.8 %	30.2 %	28.3 %	28.3 %	9.4 %
3. Could do very little to get students to believe they could do well in schoolwork	-	100 %	-	-	-	5.7 %	17%	45.3 %	22.6 %	9.4 %

4. Could do very little to help students value learning	-	83 %	16.7 %	-	-	7.5 %	13.2 %	41.5 %	22.6 %	15.1 %
5. Found it hard to craft good questions for students	-	-	100 %	-	-	5.7 %	18.9 %	32.1 %	32.1 %	11.3 %
6. Could do very little to get my students to follow classroom rules	-	-	-	100 %	-	1.9 %	18.9 %	30.2 %	34%	15.1 %
7. Could do very little to calm a student who is disruptive or noisy in class	-	-	-	83.3 %	16.7 %	3.8 %	17%	26.4 %	39.6 %	13.2 %
8. Could do very little to establish a classroom management system with my students	-	-	83.3 %	16.7 %	-	5.7 %	24.5 %	28.3 %	30.2 %	11.3 %
9. Found it difficult to use a variety of assessment strategies	-	-	66.7 %	33.3 %	-	17%	45.3 %	3.8 %	20.8 %	13.2 %
10. It was difficult to provide alternative explanations or examples when students were confused	-	-	83.3 %	16.7 %	-	3.8 %	24.5 %	35.8 %	24.5 %	11.3 %
11. It was hard to assist students who were not doing well outside of usual class time.	-	100 %	-	-	-	11.3 %	41.5 %	28.3 %	13.2 %	5.7 %
12. It was very hard to implement alternative teaching strategies in the classroom.	-	-	100 %	-	-	20.8 %	49.1 %	5.7 %	15.1 %	9.4 %

Note: Where SA= Strongly Agree, A=Agree, N A/D= Neither Agree nor Disagree, D=Disagree, SD= Strongly Disagree. **Source:** Field data, 2021

Discussion

Efficacy for Classroom Management

Classroom management is a very important part of teaching and especially for teachers who are new to the profession, managing students' behavior is difficult (Sieberer-Nagler, 2016). According to Sieberer-Nagler (2016), classroom management determines the classroom climate while the classroom climate influences student behavior and growth. It is also important to note that a positive classroom climate promotes positive relationships as it feels safe and supportive of student learning (Schnitzler, Holzberger, & Seidel, 2020). The findings from Items 1 (controlling disruptive behavior in the classroom), Item 6 (getting students to follow classroom rules), Item 7 (calming a student who is disruptive or noisy in class), and Item 8 (establishing a classroom management system with students) make up the classroom management subscale of the TSES. From the analysis of Item 1, the majority of the participants who taught using the hybrid mode of instruction disagree that they could do very little to control disruptive behavior in the classroom. From Item 6, which is getting students to follow classroom rules, it was observed that the majority of those who used the hybrid mode of instruction disagree that they could do very little to get their students to follow classroom rules. From Item 7, among those who used the hybrid mode of instruction, the majority disagree that they could do very little to establish a classroom management system with their students. From Item 8, the majority of those who used the hybrid mode of instruction disagree they could do very little to calm a student who is disruptive or noisy in their class. This finding reveals that the majority of participants who taught using the hybrid mode of instruction had high beliefs about their efficacy for classroom management.

From the analysis of Item 1 all participants who taught virtually disagree that they could do very little to control disruptive behavior in the classroom. From Item 6 all those who taught virtually disagree that they could do very little to get their students to follow the classroom. From Item 7, the majority of those who taught virtually disagree that they could do very little to establish a classroom management system with their students. From Item 8, the majority of those who taught virtually disagree that they could do very little to calm a student who is disruptive or noisy in their class. This finding reveals that the majority of participants who taught virtually had high beliefs about their efficacy for classroom management.

Efficacy for Student Engagement

Student engagement addresses problems in student learning, low academic achievements, and dropout rates (Wang and Degol, 2014). Student engagement is encouraged when the emotional, cognitive, and behavioral needs of students are satisfied by their teachers. When students have a sense of psychological freedom, they become more engaged (Cents-Boonstraet al., 2020) The findings from Item 2 (motivating students who show low interest in schoolwork Item 3 (getting students to believe they can do well in their schoolwork), Item 4 (helping students value learning), and Item 11 (assisting students who are not doing well outside of usual class time) make up the student engagement subscale of the TSES. From the analysis of Item 2, the majority of the participants who taught using the hybrid mode of instruction agree that they found it difficult to motivate students who show low interest in schoolwork. From Item 3, the majority of the participants who taught using the hybrid mode of instruction neither agree nor disagree that they could do very little to get students to believe they could do well in schoolwork. From Item 4, the majority of those who taught hybrid neither agree nor disagree that they could do very little to help students value learning. From Item 11, the majority of those who used the hybrid mode of instruction agree that they found it hard to assist students who were not doing well outside of usual class time. This finding reveals that the majority of participants who taught using the hybrid mode of instruction had low beliefs about their efficacy for student engagement.

From the analysis of Item 2 all participants who taught virtually agree that they found it difficult to motivate students who show low interest in schoolwork. From Item 3, all participants who taught virtually agreed that they could do very little to get students to believe they could do well in schoolwork. From Item 4, the majority of those who taught virtually agree that they could do very little to help students value learning. From Item 11, all who taught virtually agreed that they found it hard to assist students who were not doing well outside of usual class time. This finding reveals that the majority of participants who taught virtually had low beliefs about their efficacy for student engagement.

Efficacy for Instructional Strategies

Instructional strategies are the methods or techniques teachers use to deliver educational materials to students in ways to keep them engaged,

help them be strategic learners and critical thinkers, and help them become independent (David, 2007). The findings from Items 5 (crafting good questions for students), Item 9 (using a variety of assessment strategies), Item 10 (providing alternative explanations or examples when students are confused), and Item 12 (implementing alternative teaching strategies in the classroom) make up the instructional strategies' subscale of the TSES. From Item 5, a tie exists in the majority of those who used the hybrid mode of instruction between those who disagree and those who neither disagree nor agree that they found it hard to craft good questions for their students. From Item 9, the majority of those who used the hybrid mode of instruction agree that they found it difficult to use a variety of assessment strategies. From Item 10, the majority of those who used the hybrid mode of instruction neither agree nor disagree that they found it difficult to provide alternative explanations or examples when students were confused. From Item 12, the majority of those who used the hybrid mode of instruction agree that they found it hard to implement alternative teaching strategies in the classroom. This finding reveals that the majority of participants who used the hybrid mode of instruction had low beliefs about their efficacy for instructional strategies.

From Item 5, all those who taught virtually neither agree nor disagree that they found it hard to craft good questions for their students. From Item 9, the majority of those who taught virtually neither agree nor disagree they found it difficult to use a variety of assessment strategies. From Item 10, the majority of those who taught virtually neither agree nor disagree that they found it difficult to provide alternative explanations or examples when students were confused. From Item 12, all participants who taught virtually neither agree nor disagree that they found it hard to implement alternative teaching strategies in the classroom. This finding reveals that all participants who taught virtually were indifferent in their belief about their efficacy for instructional strategies.

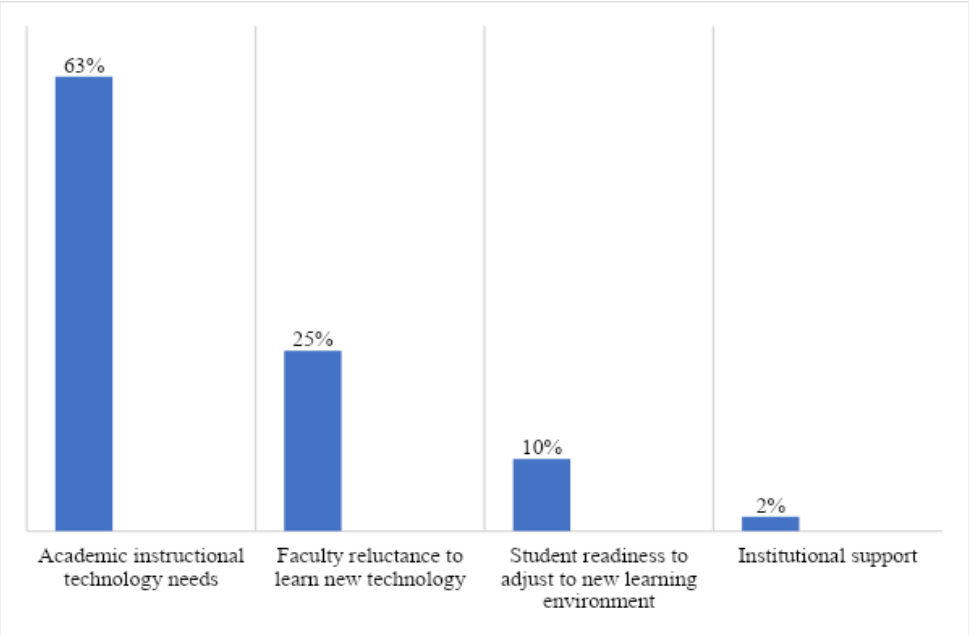

Figure 4: Challenges Teachers Faced in Teaching During COVID-19
Source: Field data, 2021

According to survey data, 10% of participants indicated student readiness to adjust to the new learning environment as a challenge to teach during the COVID-19 pandemic. According to a study carried out in 2021, students who had personal computers, internet connections, and a smartphone were more ready for online learning. The study also revealed that students who had high levels of readiness were more successful academically during the COVID-19 online learning (Taşkın & Erzurumlu, 2021). This finding suggests that providing students with the technology needed for online learning increases readiness.

Another challenge was faculty/teachers' reluctance to learn new technology. From the survey data, 25% of participants indicated that this was a challenge. This finding aligns with the finding of Keesee & Shepard (2011), that instructors at HBCUs are reluctant in adopting instructional technologies compared to their non-HBCU counterparts. In general, research suggests that HBCU institutions have been reluctant in offering distance learning as compared to non-HBCU institutions. In 2017, a study was conducted to examine online learning in HBCUs. The findings from the study revealed that online learning programs were more prevalent in non-HBCUs than in HBCU institutions (Martin, 2017). By 2010, only 10% of HBCU institutions offered online degrees (Flowers et al., 2012). Another study conducted in 2019 using data from the Department of

Education and the National Center for Educational Statistics revealed that ¾ of students who attended public and private PWI took online courses (Riggs & Jackson, 2019). Yet, while the number of online courses had increased compared to the findings from 2010, only 1/3 of 102 HBCUs offered online courses. Smith et al. (2020) argue that there are two reasons for this. First, the slow growth is due to money/finances and its mission. With regard to money, HBCUs are underfunded and understaffed. This limits their ability to offer online learning courses like PWI institutions (Mitchell, 2019). The second reason has to do with its mission. According to research, most students who attend HBCUs choose to attend due to cultural identity, legacy, cost, location, and alumni. Online education doesn't quite give the full HBCU experience (Smith et al., 2020; Williams, 2017). Another study however argues that the reluctance in adopting online technologies and the inconsistent use of these technologies by faculty members who are reluctant to move from basic technologies could be a reason for the slow growth of online education in HBCUs as their study revealed that in HBCU institutions that had had course management technologies, the adoption of the technologies was inconsistent (Keesee & Shepard, 2011). Their study also revealed that in HBCU institutions that had course management technologies adopted, the use of these technologies was inconsistent as many faculty members had not moved away from basic technology. While the above studies were conducted preCOVID-19, there are limited studies to investigate how the adoption of technology in teaching and learning during the COVID-19 pandemic impacted instruction in HBCU institutions. This study, therefore, plans to fill this existing gap thus serving as a bridge in literature.

Based on the survey data, 63% of participants agreed that academic instructional technology needs were one of the challenges while 2% of participants indicated institutional support as a challenge. Research shows that institutional support during the COVID-19 distance learning has a positive impact on work-life balance as well as reducing work-related burnout in instructors (Kumpikaite-Valiunien et al., 2021). Research also shows that institutional support increases efficacy and productivity (Falola et al., 2020). Institutional support could include providing teachers with professional development programs to prepare them for online learning, providing technological infrastructures necessary for online learning, and/or other types of administrative support (Gillespie, 2021).

Conclusion

The findings from this study differ from the findings of other studies as it shows no difference between the efficacy of teachers who taught virtually and teachers who used the hybrid mode of teaching during the COVID-19 pandemic as they all had low beliefs about their efficacy for student engagement and instructional strategies (Pressley & Ha, 2021). Even though literature suggests that students who enroll in hybrid courses have better academic outcomes than students enrolled in online/virtual courses (Namyssova et al., 2019; Vonti & Grahadila, 2021), the findings from this study does not reflect that, as teachers who taught using the hybrid mode of teaching had low beliefs about their ability to engage their students and low beliefs about their ability to use various instructional strategies just like teachers who taught virtually. And they both had high beliefs about their ability to manage their classrooms.

Teachers' belief about their instructional capabilities is important because it impacts teachers' creativity (Ma, 2022), exertion of effort by the teacher (Freeman, 2008), and instructional competence (Pellerone, 2021). Research shows that teacher efficacy has a positive influence on instructional behaviors such as emotional and pedagogical support. Meanwhile, instructional behaviors have an impact on students' cognitive development (Alibakhshi, Nikdel, & Labbafi, 2020). A study that investigated the effect of teacher efficacy on students found that students showed better outcomes when taught by teachers with high self-efficacy. From this study, it can be deduced that teacher efficacy has a positive relationship with student outcomes (Ross, Hogaboam-Gray & Hannay, 2001). Another study that investigated the effect of teacher self-efficacy enhancement on student achievement revealed that teacher self-efficacy had a significant impact on student achievement. (Durowoju & Onuka, 2015).

Research shows that institutional support has an impact on teachers (Makhaya & Ogange, 2019). Jakhaia (2018) carried out a study to examine the impact of a 25-hrs professional development program on teacher efficacy. Results from the study showed that teachers who attended the 25-hrs professional development program had higher self-efficacy in their ability to instruct. This suggests that exposing teachers to self-efficacy enhancement programs will have positive impacts on students' academic achievements which, according to research, has economic impacts on labor market productivity (Watts, 2020).

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