QATAR UNIVERSITY

COLLEGE OF EDUCATION

TEACHER SELF- EFFICACY IN EMERGENCY ONLINE TEACHING – A CASE OF

QATARI GOVERNMENTAL SCHOOLS

BY

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ABSTRACT

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Title: Teacher Self- Efficacy in Emergency Online Teaching – a Case of Qatari Governmental Schools

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This study investigates primary school teachers' self-efficacy beliefs in online teaching during the pandemic. It also intends to highlight if there are significant differences in the level of self-efficacy according to various demographics. Data was collected from primary school teachers in Qatar government schools using a web-based survey, which assessed self-efficacy in three domains: Students Engagement, Classroom Management, and Instructional Strategies. Four open-ended questions were inserted at the end of the survey to evaluate teachers' challenges and coping strategies and the required and received support.

A total of 514 teachers responded and completed the survey voluntarily. The results indicated that primary school teachers positively reported their self-efficacy beliefs in online teaching. Additionally, the T-test and the ANOVA analysis revealed significant differences between primary teachers' self-efficacy level and years of experience in the three domains. However, no significant differences were found between self-efficacy levels, gender, and age in any domain.

DEDICATION

Dedicated to my role model, the one who helped me grow into the person who I am

now.

My mom.

ACKNOWLEDGMENTS

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CHAPTER 1: INTRODUCTION

1.1 Background

The coronavirus outbreak has affected every aspect of human life as we know it. Since the 11th of March 2020, when a health emergency declaration was raised by the World Health Organization (WHO), stating COVID-19 to be a global pandemic, many sectors witnessed major setbacks, be the academic or industrial (Cucinotta & Vanelli, 2020). The common notion that preparation and planning are the keys to success has failed to uphold its relevance in the COVID-19 outbreak. Risk management for COVID-19 is primarily considered to be "uncertain-uncertain" owing to the limited time and scope for planning, preparation, and execution. It is an unprecedented risk that was unforeseen, thus requiring a drastic adaptation to a new way of life.

COVID-19 has caused extensive consequences in the education sector. Since the inception of the pandemic, all educational providers have been forced to shut down. According to the UNESCO, due to the outbreak, the international closing down of schools and institutions pushed more than 1,500,000 young people to remain at home in 191 countries worldwide (Affouneh, 2020). Discontinuity in education owing to the closure of schools cannot be long entertained. Thus, alternative approaches are imperative to ensure students remain engaged with their education. Although they are not yet fully prepared for the circumstances at hand, schools and educational institutions are drawing upon solutions regarding continuing education while keeping their students, teachers, and institutions' staff members protected from this widespread epidemic. Hence, academic sectors' decision to adopt online learning to avoid disruptions in education (Hodges et al., 2020).

The COVID-19 pandemic has facilitated a pedagogical shift from traditional face-to-face didactic methods to a new exciting, interactive online learning environment. Education systems over the years have witnessed several changes that are primarily driven by technological advancements. The COVID-19 crisis has provided the opportunity to explore said advancements distinctively. The primary intent has been to facilitate online teaching and learning via the promotion of web-based learning systems and digital platforms, and simultaneously ushering in a radical change in learning (Loeb, 2020). Thus, online learning was no more a trend but a mainstream.

The emergency transition to online education has been a quintessential adaptive and transformative challenge for educators. It has required teachers to abruptly develop skills for adequate and effective operative performance on distance learning platforms. Their occupational roles are now restricted to the delivery of the course syllabi and strengthening relationships with students to keep them motivated and dedicated. Moreover, teachers are also entrusted with the responsibility to prepare content and constructive curriculums; that would help build skills and knowledge that are key to online learning and development for students (Hodges et al., 2020). In this sense, teachers are assigned a crucial role in the comprehensive progression of their students. They are not only liable for the student's academic development but are also responsible for shaping their lives as well as their perceived outlook towards society (OECD, 2006).

However, the current pandemic has exposed teachers to the pressures of potential uncertainty. Rapid changes in educational delivery methods have challenged their abilities to adapt to situational demands (Baloran & Hernan, 2020). Although teachers have been continuously striving to ensure that the learners' educational, emotional and cognitive well-being needs are met, they remain confronted with multiple challenges to overcome the impacts of the pandemic on the educational sector.

Given that the pandemic is nowhere near its end, online learning is deemed the solution for the foreseeable future, as teachers are bound to make themselves competent and adaptive enough to this new norm in pedagogical settings.

1.2 The importance of self-efficacy on teachers' work

Several studies have demonstrated the importance of teachers' self-efficacy as the main factor of education quality and learning outcomes (Affouneh, 2020; Allinder, 1994; Balckburn & Robinson, 2008; Infurna, 2016; Lin & Zheng, 2015; Riggs & Enochs, 1990;). Teachers' perception of their self-efficacy affects their decisions in choosing learning activities within the classroom (Sahertian & Soetjipto, 2011) as well as when coping with challenging situations. The stronger the belief in one's self-efficacy, the more successful one coping attempts would be (Bandura & Adams, 1977). Highly officious teachers tackle disruptive situations with the belief and confidence that they will exert power to reduce disruption. They tend to put extra effort into their work in displaying higher organizational and planning skills (Allinder, 1994). Additionally, they spend more time teaching in their particular subject areas (Riggs & Enochs, 1990; Balckburn & Robinson, 2008).

In contrast, a low level of teaching efficacy correlates with teachers' attitudes regarding their ability to positively influence their students and improve their learning skills (Robinia & Anderson, 2010). Less assertive teachers can feel hopeless, avoid complex tasks, and usually give up quickly because they do not believe in a successful outcome (Riggs, 1995; Lin & Zheng, 2015). Similarly, teachers with low self-efficacy have extremely low expectations and devote insufficient time to their duties (Riggs &

Enochs, 1990). As a result, the lower the teachers' self-efficacy, the less time they will devote to their duties (Wong, 2003).

Consequently, teachers' beliefs regarding their abilities can affect students' success (Lin, & Zheng, 2015). In other words, teachers' self-efficacy directly correlates to students' performance and achievements. As effective teachers can control, or at least enormously enhance their students' motivation to learn and improve (Armor et al., 1976; Robertson & Al-Zahrani, 2012). Recent studies have strongly promoted teachers' efficacy and learners' development (Brown, Brown, Reardon, & Merrill, 2011; Lumpe, Czerniak, Haney, & Beltyukova, 2012; Robertson & Al-Zahrani, 2012).

1.3 Emergency Online Teaching

Many nations, including Palestine, Syria, Afghanistan, and South Africa, have previously used e-learning in emergencies. What is emergency online teaching (EOT)? EOT differs completely from online learning. It is a sudden shift from the face-to-face teaching mode to an alternative teaching process due to emergencies. In contrast to classes initially planned to take place online (Hodges et al., 2020). EOT requires the use of distanced, interactive teaching solutions that would have been provided in face-to-face classes and that will eventually revert to such use after the situation or emergency is complete. EOT requires teachers to work in highly stressful situations without knowing when the crisis will end. In an emergency educational situation, the main goal is not to recreate a solid educational system but rather to attempt to offer complete access to learning resources and support in a way that can be both quickly and consistently established (Hodges et al., 2020). Consequently, teachers in such

environments are faced with new demands and challenges in that they need to be equipped with skills and knowledge regarding ensuing changes (Affouneh, 2020).

Amid the global pandemic of the Coronavirus, the maxim "Maslow before Bloom." is more relevant now than ever before. A crucial statement that should be maintained at the forefront of teachers' approaches, most notably during emergencies. "Maslow before Bloom" simply means that fundamental human needs come into priority before their learning needs. In this sense, before the implementation of the learning taxonomy of Benjamin Bloom *Remembering, Knowing, Implementing, Assessing, Evaluating, and Developing* teachers must first ensure that the fundamental needs of their students are fulfilled, as better exemplified in the hierarchy of needs of Abraham Maslow: beginning with physiological and safety requirements of social interaction, self-esteem, and self-actualization (Affouneh, 2020).

Since it is established that teachers are the primary guide to student's holistic development, the shift in the education system during the pandemic necessitates teachers to first and foremost make themselves competent enough to embrace change. Emergency education calls for special adaptive skills. However, in the students' context, such skills rely on the teacher's capability to make students aware of the impending change. While conventional educational environments are bound by rules and regulations, implementing the same values in the virtual online educational platforms is indeed a critical target to achieve. Thus, teachers' self-efficacy is undoubtedly the more significant determinator of student performance outcomes in an online learning environment.

1.2 Statement of the problem:

Due to the global acceleration of the spreading of Covid-19, online teaching has become a challenge that threatens both current and future educational quality (Affouneh, 2020). According to Affouneh (2020), the COVID-19 crisis has unprecedentedly affected learning and teaching processes, with some 191 countries shutting schools at their peak, affecting 1.5 billion children and more than 63 million educational institutions. Governments have had to move quickly to face the challenge of providing quality education in this emergency, in which face-to-face pedagogy is no longer suitable. In such a case, this has meant that education is facing new challenges and demands concerning technology, access, and connectivity to online education and readiness expertise.

In EOT, mainly when teaching lower grades, teachers are challenged to do more than just teach. According to Horchler (2002), teachers indicated that compared to the traditional classroom setting, teaching online is much more challenging in maintaining students' attention, carrying out discussions, progress tracking, and providing student assistance. The striking difference in online settings is that learners may face more distractions and less regulation, which can negatively affect their motivation. As a result, there will be a noticeable reduction in the quality of students' achievements (Hallman, 2020). These challenges are due to distance learning itself, and the difficulty students face regarding distance learning such as the lack of access to technology and internet services. For instance, this is evident in families that consist of more than one child yet only have one computer to work on (Loeb, 2020).

Research findings have shown that the competence required for EOT is somewhat different than that which is demanded by traditional face-to-face teaching

(Loeb, 2020). On the practical side, EOT requires teachers to engage in innovative problem-solving. To achieve the best possible results from EOT, they need to work outside traditional frames and create different solutions to support learners and fulfill all students' needs, particularly those struggling to engage. Teachers need to direct their efforts to involve all students by going beyond replicating a traditional class/lecture using various interactive resources and approaches that encourage inclusion, personalization, and knowledge (Li & Lalani, 2020). Research has found that online teaching is effective when it is collaborative rather than a simple method of using intensive "drill and kill" activities. It should provide real-time feedback and encourage students to participate, practice, and analyze what they learn creatively (Darling-Hammon, Zielezinski & Goldman, 2015).

As for the Qatari government schools' response to COVID- 19, the Ministry of Education and Higher Education (MOEHE) has adapted distance learning to efficiently prevent the spread of COVID- 19, ensuring that all learners can continue their education and that their studies are prioritized (MOEHE, 2020). Accordingly, teachers have had to acquire new skill sets quickly. Additionally, they have had to liaise with other educators who could shed some light on the accelerated transition from face-to-face teaching to distance learning. Moreover, teachers' use of technology in new ways has provided higher education to students ensuring a sense of belonging and integration despite the distance (Loeb, 2020).

1.3 Research Aim

This research investigates primary teachers' self-efficacy beliefs related to online teaching in the context of a pandemic.

1.4 Research Questions

1. How do primary school teachers in Qatari governmental schools report their self-efficacy of online teaching during the pandemic?

2. Is there a significant difference in online teaching efficacy according to these variables: age, gender, years of experience?

1.6 Significance of the Study

One essential goal of Qatar's educational reforms is to improve teaching quality to ultimately develop student achievement (Al-Thani & Nasser, 2012). Teachers' efficacy is the key contributor to both students and schools' academic achievement (Robertson & Al-Zahrani, 2012). Since all schools aim to offer quality education, most existing studies of teachers' self-efficacy beliefs have mainly focused on the traditional classroom context, yet little is known about self-efficacy in emergency online classrooms. The current study aims to investigate personal teaching efficacy (PTE) regarding EOT as emergency online classrooms create an environment that differs in many ways from traditional classrooms.

Therefore, this quantitative study will potentially contribute to the literature by providing statistical data that can bridge some of the gaps in the literary works regarding teachers' self-efficacy in an EOT setting, in order to clarify how teachers' self-efficacy play a role in distance learning and online teaching. Moreover, this study could provide evidence for guiding practice and recommendations for future EOT.

1.5 Definition of terms:

Self-efficacy: the belief in one's ability to execute and perform the action necessary for achieving specific achievements in particular situations (Bandura, 1997).

Teacher self-efficacy: the teachers' self-reported measure of their ability to accomplish specific goals and complete professional tasks (Tschannen-Moran, Hoy & Hoy, 1998). This study identifies teacher self-efficacy as primary governmental school teachers beliefs about their own abilities to perform the professional tasks to facilitate the students' knowledge development.

Emergency online teaching: A sudden shift from face-to-face teaching mode to an online way due to emergencies (Hodges et al., 2020).

CHAPTER 2: LITERATURE REVIEW

This chapter begins with a theoretical background of teachers' efficacy on online learning and consequently provides an outlook on previous studies investigating teachers' self-efficacy. The chapter is divided into two sections. Section one gives a detailed background of the social cognition theory, which supports the growth of the self-efficacy theory and its associations with teaching. The section also discusses a theoretical framework, based on Bandura' theory of self-efficacy. Section two examines previous studies related to teachers' self-efficacy.

2.1 Conceptualizing self-efficacy
2.1.1 Self-efficacy – History and Definitions

Two decades prior, the first construct of self-efficacy was introduced by psychologist Albert Bandura (1977). Since then, studies have shown the influence of perceptions of efficacy in human performance, success, and motivation in many contexts. For instance, efficacy perceptions are linked to negative behaviors, devotion to positive behaviors, professional performance, and academic achievement (Bandura, 1997). Subsequent attempts to enhance the understanding and measurement of individuals perceived self-efficacy have continued to rely on the social-cognitive framework (Gibson & Dembo, 1984; Tschannen-Moran et al., 1998). The self-efficacy concept has evolved from the social cognitive theory of Bandura (1977), who indicated that human beings have a self-system that helps them measure self-efficacy concerning the ability to control their thoughts, emotions, and behaviors.

The definition and assessment of self-efficacy has been the subject of numerous studies (Bandura, 1997; Guskey & Passaro, 1994; Knobloch & Whittington, 2002; Knobloch & Whittington, 2003; Tschannen-Moran et al., 1998 and Tschannen-Moran

et al. 2001). Self-efficacy was first identified by Bandura (1977) as people's perception of their ability to conduct and perform the actions needed to accomplish specific goals in certain circumstances. As Bandura emphasized, one's self-efficacy is unique to one specific role or function rather than a generic personality trait that directs behavioral choices in all cases (Tschannen-Moran et al., 1998).

Beyond the definition of self-efficacy, Bandura (1993) later described self-efficacy as a cognitive mechanism in which persons can build perceptions about their ability to succeed at a specified performance level. According to Bandura (1993), self-efficacy can be defined as a future-oriented expectation, regarding the degree of competence an individual expects to demonstrate in a given situation. This idea was reasserted by Bandura (2006) in his opinion that individuals are constructive and self-reflecting. In a similar sense, a person's self-efficacy is their confidence in their capability to complete particular tasks (Goddard, Hoy & Hoy, 2004). Goddard, Hoy & Hoy (2004) asserted that it is not an evaluative judgment about what has been done; instead, it is a judgment about what can be done.

2.1.2 Self-efficacy impact factors

Based on Bandura's (1977) theory, four factors affect efficacy beliefs: mastery experiences that act as the ability indicators; vicarious experiences that modify efficacy perceptions by communicating qualifications and contrasting them with other people's achievements; verbal coercion and allied forms of social pressures; and physical and affective states by which individuals partially assess their strengths and weaknesses.

The first and most influential factor is mastery experiences. Indicating that having the first-hand experience in completing tasks determines how successful people have been with those tasks in the past (Hoy & Miskel, 2005; Bandura, 1974, Bandura,

1977). In this regard, Tschannen-Moran, Hoy, and Hoy (1998) have claimed that teachers can only judge their competency and efforts towards tasks in actual teaching situations because experiences give the most practical proof of the capability level of individuals to complete their jobs successfully.

The second factor that affects efficacy beliefs is vicarious experiences, in which self-efficacy is affected by social modeling. Here Bandura (1974; 1977) talks about being observant, that is, to observe successful people. Observing successful people generates a belief that it is possible to have a similarly successful career. Teachers can reassure themselves that they can accomplish the standard requirements in concern to teaching efficacy if others can do it too. Social modeling is considered an excellent pre-service teacher training strategy (Tschannen-Moran et al., 1998; Mulholland & Wallace, 2001).

A further efficacy impact factor is verbal persuasion, which can very quickly and efficiently impact the expectations towards a person's performance. This highlights the capability to surpass the status quo if one surrounds themselves with like-minded or positively influential people (Hoy & Miskel, 2005; Bandura, 1974, Bandura, 1977). Verbal persuasion influences teachers' self-efficacy by encouraging and supporting their abilities and offering strategies for coping with situational challenges (Tschannen-Moran et al., 1998).

The concluding impact factor is states of physiology, both negative and positive emotions, such as tension/stress and excitement/happiness, that can influence efficacy (Tschannen-Moran et al., 1998). A high level of self-efficacy may be the product of a strong sense of internal empowerment, reduced tension, and self-driven motivation to accomplish a task. In contrast, a low level of self-efficacy may be the product of stressful situations (Hoy & Miskel, 2005; Bandura, 1974, Bandura, 1977).

2.1.3 Self-efficacy in cognitive development

Self-efficacy perceptions determine and control individuals' feelings, behaviors, and learning outcomes; through encouraging themselves and interacting with others (Bandura, 1993). Thus, individuals' cognitive process of their thoughts has a significant impact on their self-efficacy. According to Bandura (1993), human behavior is mainly shaped through perspective. Consequently, efficacy beliefs influence the anticipatory scenarios people construct for themselves. People with a high sense of self-efficacy usually imagine scenarios surrounding achievements or success, thus positively impacting and supporting the actual performance. On the other hand, those with a low sense of self-efficacy regularly imagine failure-based scenarios, resulting in self-doubt and hesitancy regarding their capabilities. Due to these scenarios' psychological impact, maintaining positivity and high expectations seems nearly impossible (Bandura, 1993).

Furthermore, it is essential to mention that there are conflicting views regarding skills and capabilities in specific contexts. There is a noticeable distinction between having knowledge, skills, and abilities to use under demanding circumstances to succeed (Balckburn & Robinson, 2008). Individual's success does not only require skills but also efficacy beliefs to better utilize them. Effective cognitive processing of knowledge is an essential requirement of such skills (Bandura, 1993; Bandura, 2006).

2.2 Teacher self-efficacy
2.2.1 Teacher self-efficacy definitions

As indicated in the argument above, teacher self-efficacy (TSE) has been defined as a teacher's perception regarding their ability to effectively handle their roles and responsibilities (Heneman et al., 2006); however, TSE definitions have some

variations. For instance, Dembo and Gibson (1984) described TSE as a teachers' assessment of their competency to induce a positive change in students' outcomes. Tschannen-Moran, Hoy, and Hoy (1998), on the other hand, claimed that TSE is a teacher's perceptions of their competence to accomplish the teaching goals in a particular setting. Similarly, Guskey (1998) defined teacher self-efficacy as teacher's belief that they can achieve specific goals in specific situations and ways.

TSE cannot be a generalized characteristic of teachers; instead, it is particularly associated with their teaching roles. Such perceptions can affect how much effort is made by teachers in the classroom. These efforts can include: experimenting with new strategies and coming up with new ideas that better meet students' needs and expectations; how long they can endure challenges; their resilience in overcoming defeats; and how much discomfort or disappointment they feel when dealing with stressful conditions (Bandura, 1997). In other words, TSE influences teachers' perseverance when things do not go as expected as well as their flexibility towards setbacks (Heneman et al., 2006). TSE is intricately associated with teachers' effectiveness in constructing and implementing teaching activities, as it serves as a strong influencer of teachers' behavior and endeavors (Klassen & Chiu, 2010; Klassen & Tze, 2014). Overall, teachers' self-efficacy is defined as a self-reported measure of their ability to accomplish specific goals, complete professional tasks, and manage challenges related to their professional activities.

2.2.2 Research on Teacher Self-efficacy development

Research into teacher self-efficacy has an extensive history. For over two decades, educators have questioned the precise concept of teacher self-efficacy.

Researchers stipulated two main theories regarding the matter, one of them being the locus of control framework of Rotter in the 1970s (Armor et al., 1976), and the other being the Self Efficacy theory of Brandura (1977) (Tschannen-Moran, Woolfolk-Hoy & Hoy, 1998). The former is the framework of the social learning theory of personality by Rotter (1954).

This parameter has been defined as the level of individuals' belief in their control over their lives' outcomes. Rotter (1975) pointed out that a persons' locus of power may be internal (a person who bases his success on his work) or external (a person who attributes his success or failure to outside influences).

As Bandura's (1977) self-efficacy construct began to spread, educators and researchers observed a significant difference between Rotter's theory, which focused on effective behavior, and Bandura's theory, which focused on efficacy beliefs. Irrespective of their differences, both approaches are deemed equivalent (Tschannen-Moran et al., 1998). Rotters' self-efficacy discusses a person's perception of the impact of behavior on outcomes. In contrast to the theory of self-efficacy where Bandura discusses the assumption that a person's acquired traits can achieve such results (Bandura, 1977). This difference became a distinction of how efficacy is measured (Dellinger, 2005; Dellinger et al., 2008; Leslie, 2011; Tschannen-Moran & Hoy, 2001; Tschannen-Moran et al., 1998). Following both approaches, Tschannen-Moran and others (1998) conducted a teacher efficacy model. Within the integrated model, the four critical factors of self-efficacy beliefs are assumed to influence teacher efficacy. Moreover, it is within the social cognitive process, indicating that teacher efficacy beliefs are developed within social parameters.

Regarding the teacher efficacy model, Tschannen-Moran et al. (1998) recommended that the teacher efficacy measurement must assess two central

components: analysis of teaching tasks and assessment of personal teaching competency. Teachers primarily analyze the required tasks and then evaluate their teaching competency to judge their efficacy (Tschannen-Moran et al., 1998). One of the most powerful features of this model is its cyclical nature, as every newly mastered experience influences potential expectations regarding self-efficacy. Higher efficacy expectations lead to better efforts and perseverance, which ultimately leads to improved outcomes. Hence, it can be concluded that better short-term effects contribute to higher long-term efficacy expectations (Tschannen-Moran et al., 1998).

It is equally important to clarify what measures self-efficacy requires. Bandura (1997) explained the two subscales of self-efficacy: personal expectation beliefs and outcome-related expectations, which act as predictors for actions. Personal expectations measure one's belief in their competency to attain an expected outcome, while outcome expectations are an individual's belief that certain behaviors will determine outcomes (Bandura, 1997). Bandura (1997) noted that teachers who have strong personal and outcome expectations are more likely to be resilient during disrupted learning situations. In contrast, those with low measurements on both scales are more likely to be frustrated quickly if they do not meet their desired outcomes.

It is noted by Tschannen-Moran et al. (1998) that teacher self-efficacy is either contextual or situational. Teachers may feel confident in their self-efficacy in some situations more so than in others (Hodges, 2008). Bandura (2006) argued that no one could be all things; that is, no one is a master in every realm of their life. As opined by Riggs and Enochs (1990), in education, teachers vary in their efficacy areas, levels, and developments. Therefore, the efficacy beliefs system is not a worldwide attribute; it is a set of self-perceptions.

2.2.3 Self-Efficacy Contexts

In a qualitative study conducted in Europe and Australia, 54 online faculty teachers participated in assessing self-efficacy in varying disciplines. Participants reported a high sense of self-efficacy in online instruction and interaction, yet low levels of self-efficacy were reported in the use of technological resources (Northcote, Gosselin, Reynaud, Kilgour, Anderson, 2016).

In another study, Horvitz, Beach, Anderson & Xia (2015) looked at professors' self-efficacy in online teaching using a web questionnaire, whereby 91 professors from a variety of universities completed the survey. The results indicated high levels of self-efficacy in online education among the professors surveyed. The domains with the highest mean of self-efficacy were classroom management and instructional strategies, while the domain with the lowest mean was student engagement. Moreover, statistical differences were found in gender and years of experience. Professors who taught more online courses perceived higher levels of self-efficacy than others. Also, female professors reported higher self-efficacy than males in the instructional strategies field.

In an attempt to evaluate the self-efficacy of primary school science teachers in Ohio, Lumpe et al. (2012) employed two surveys: the Science Teaching Efficacy Beliefs Inventory (STEBI) and the Context Beliefs About Teaching Science (CBTS). The surveys were completed by approximately 450 primary teachers, and the results revealed that male teachers had higher self-efficacy beliefs than their female counterparts.

Furthermore, Mehdinezhad (2012) measured university teachers' self-efficacy in teaching in Iran using a questionnaire. He sought to investigate the relationship of self-efficacy regarding two main variables; teaching experience and gender. According

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to the findings, teachers with more than 20 years of experience reported higher levels of self-efficacy than teachers with less experience. However, the researcher discovered no significant differences in self-efficacy between male and female teachers.

Another study was conducted by researchers in Taiwan who used a questionnaire to measure university teachers' self-efficacy beliefs towards teaching. A total of 513 teachers from 17 public universities had responded and completed the questionnaire. Findings revealed that teachers had noticeably high teaching self-efficacy levels. The highest averages were found in course design, and the lowest was found in instructional strategies. However, female teachers showed higher self-efficacy levels than males in two sectors: learning assessment and classroom management. Teachers with more than six years of teaching experience reported higher efficacy beliefs in course design than other teachers (Chang, Lin, & Song, 2011).

Wee-Loon (2011) revealed that although male teachers scored higher in self-efficacy than female teachers, an independently sampled t-test reported that the difference was small and insignificant. The researchers used a mixed-method approach to determine the different approaches regarding self-efficacy in teaching science between male and female Singaporean primary school teachers. It also identified enabling factors and potential challenges female science teachers face with both high and low efficacy.

Voris (2011) conducted a quantitative research study on the relations between TSE and alternative certifications for novice teachers. The participants included 222 special education teachers from 21 schools in central Kentucky. The results indicated no differences in the levels of self-efficacy in teachers and the years of teaching experience. Concluding that most of the participants reported a high level of self-efficacy.

2.2.4 Self-Efficacy and Teaching Experience

Infurna (2016) found no correlation between TSE and years of early childhood teaching experience in the study of the relationship between preschool teachers' experience and self-efficacy in the United States. The researcher studied 177 teachers from a mid-sized urban district in the United States using the Teachers' Sense of Efficacy Scale (TSES). Furthermore, Kim and Kim (2010) examined the self-efficacy of 169 South Korean early childhood teachers using Bandura's Teacher Self-Efficacy Scale| (TSS). The researchers concluded that teachers reported high levels of self-efficacy in the four domains: efficacy of parental involvement, instructional strategies, effectiveness of student engagement, and decision-making efficacy. Furthermore, experience levels had positive correlations with the aforementioned self-efficacy domains.

A further study by Robinia & Anderson (2010); tested the self-efficacy of nursing teachers in Michigan and found that online teaching efficacy directly corresponds with teaching experiences. However, gender as a variable had no impact on measuring self-efficacy. This study was conducted using a quantitative method through an online survey consisting of 3 major dimensions: instructional strategies, classroom management, and student engagement.

Three years prior, Wolters and Daugherty (2007) reported that experienced teachers have higher performance levels; thus, they demonstrate higher self-efficacy levels. The researchers used quantitative research to gather data from 1,024 K–12 teachers in Texas using the TSES (Tschannen-Moran & Hoy, 2001).

In Tschannen-Moran & Hoy's (2007) study, the researchers used a survey to examine self-efficacy beliefs amongst teachers in the United States. A total of 225

teachers participated, and the results reported that experienced teachers carried higher self-efficacy than novices.

2.2.5 Self-Efficacy and Age

A study conducted by Lee and Tsai (2010) in Taiwan, known as the integrating Technological Pedagogical Content Knowledge-Web (TPCK-W), demonstrated that younger teachers with less experience carried higher self-efficacy than older and more experienced ones. Furthermore, teachers with stronger digital skills who are proficient in using the Internet also carried higher self-efficacy (Lee and Tsai, 2010). The survey was conducted with 588 participants consisting of elementary and high school teachers in Taiwan.

2.3 Online teaching self-efficacy
2.3.1 Online teaching definitions

Research on online teaching self-efficacy began after research on self-efficacy was established (Alqurashi, 2016). In the early 2000s, self-efficacy research in online environments was a new phenomenon that required further investigation (Hodges, 2008). Teaching online drastically differs from the traditional models of teaching. According to Dinc (2019), it is independent of time, independent of location, and offers the opportunity to connect with many people (Wong, 2003). Additionally, Blaine (2019) used the term "distance education". He defined it as an online educational context, where teaching and learning happen within the separation of space and time between teachers and students.

Online teaching is a type of distance education which is designed to facilitate educationalists to offer schooling to students on a virtual mode through the internet. It

is dissimilar to the traditional classroom method where courses are offered for students in a brick-and-mortar school campus. As online teaching is evolving overtime, the technologies to support this form of learning and teaching also continues to evolve (Hodges, Moore, Lockee, Trust & Bond, 2020).

2.3.2 History of Online Teaching

Online Teaching was born with the evolution of Distance Education. In distance education system, teachers and students are not physically present at one place and learning is transferred through other methods. This concept had started during late 1800s, but with the advent of technology in the 1900s; the popularity of distance education grew further (Siemens, Skrypnyk, Joksimovic, Kovanovic, Dawson, & Gasevic, 2015). It was initiated with the idea of postal services where educational materials were distributed to students through postal services. It then advanced to radio where educational information was broadcasted for learners to listen. Eventually, the learning started to be transferred through television where learners could view and listen and finally advanced to e-learning through online using the Internet. (Siemens, et al., 2015)

2.3.3 Types of Online Teaching Methods

Some of the popular types of Online teaching are as follows, First: Presentations. This method is best suited for visual learning experience for students. A well informative and attractive presentation with images, videos, bold texts, and highlights creates a significant impact on students than relying on textbooks as it helps to keep the students engaged and comprehend a complex subject. Some of the most used presentation templates are from Microsoft PowerPoint, Google Slides and Prezi. A

teacher can also easily share the presentation with their students for learning (Mishra, Gupta & Shree, 2020).

Second: Online Whiteboard. This is also a visually attractive method of online teaching which can give an in-person classroom experience for both teachers and students. Teachers use digitized canvas, diagrams, charts, templates, sketches, texts and so on in this method, which can be saved and shared with students. Teachers can also collaborate with students to use the canvas for brainstorming sessions, mind mapping, quizzes etc (Mishra, Gupta & Shree, 2020).

Third: Live Online Classes. This method is where teachers can provide lectures on live to students by using modern electronic methods such as video conferencing tools. Some of the commonly used tools are Microsoft Teams and Zoom (Mishra, Gupta & Shree, 2020).

Fourth: Pre-Recorded Video Lectures. In this method, students can do their learning at their own pace at any time. A teacher is not present in this method, rather a recorded video is shared to students for learning. This method helps to save a lot of time and energy of teachers as they are not required to repeatedly conduct classes on the same topic (Mishra, Gupta & Shree, 2020).

Fifth: Flipped Classroom. This is a very interactive and engaging method of online teaching. Students are required to read the instructional materials before the actual class and have an in-depth discussion about the topic with the teacher and their classmates during the class. Some of the commonly used techniques of Flipped Classroom are online quizzes, infographics, Mind Maps and Polls (Mishra, Gupta & Shree, 2020).

Sixth: Class Blog. This is a method where students can work on blogs and share it in a common platform for others to read. This helps to enhance research skills of students and build more confidence in self -learning (Mishra, Gupta & Shree, 2020).

Seventh: Live Chatting. This is a method where teachers and students can chat in live and have brainstorming sessions using online communication platforms such as WhatsApp, Messenger, Facebook, Skype...etc (Mishra, Gupta & Shree, 2020).

2.3.4 The importance of teacher efficacy for Online teaching

Since the quality of education is the main objective of academic and educational institutions, the spread of online teaching due to coronavirus highlights the importance of studying teachers' self-efficacy in online teaching to improve it. Dinc (2019) asserted that online teacher efficacy is the main factor in coping and overcoming challenges. Additionally, Ali, Ali, and Jones (2017) noted that online teaching success requires appropriate digital environmental skills. As well as, that online teaching self-efficacy is a strong indicator of the existence of such skills. Therefore, it is essential to improve learning outcomes through online teaching's self-efficacy so that this field can push forward into digital education (Zheng, Khan & Hussain, 2020).

2.3.5 Students and Online Classroom Management

Effective classroom management is a highly significant element which teachers need to possess, irrespective of whether it is a traditional classroom environment or online teaching platform. In the latter, although teachers and students are not in the same venue, it is important for teachers to understand student behaviors and manage their engagement. For sure there are challenges as well as instructional

strategies to overcome these challenges for online classroom management are as follows:

2.3.5.1 Online teaching challenges

Previous research has identified several online teaching challenges (Perreault et al. 2002; Liu et al. 2007; Haber & Mills, 2008; Hechter & Vermette, 2013). The first and most agreed challenge lies in the lack of skills, whereby instructors who taught online courses reported that they struggled with the lack of support in software and hardware technical issues (Berge, 1998; Perreault et al. 2002; Hechter & Vermette, 2013; Petzold, 2020; Marek, Chew & Wu, 2020). Teachers found it an intimidating task to suddenly shift to online classes because they were not fully prepared, meaning that they did not have the sufficient knowledge, skill, and experience required for online pedagogy (Petzold, 2020). Moreover, Perreault et al. (2002) found that both students' and instructors' competence in using technology was highly challenging.

The second challenge in online teaching is related to online interactive issues, such as the insufficiency of innovative online teaching methods due to the lack of face-to-face relationships (Shea, 2007; Sharma & Bumb,2020). The lack of student motivation and the missed opportunities to interact with teachers and peers cause disruptions in the online classroom (family/home circumstances, etc.). Besides, teachers struggled with societal barriers towards innovation and online teaching strategies (Berge, 1998; Perreault et al., 2002; Hechter & Vermette, 2013). The third challenge identified by online teachers in Liu et al. (2007) included the heavy workload required in online teaching and the impersonal nature of online lessons. The fourth challenge is the lack of teachers' participation in educational policies (Marshall, 2007; Gale, 2007; Altun, 2007).

The last noticeable challenge is identified as personal obstacles and being anxious to get out of the comfort zone (Gillette-Swan, 2017; Moore-Hayes, 2011). Moore-Hayes (2011) and Gillette-Swan (2017) noted that most teachers build barriers to success when they do not give themselves the chance to learn new things. They also become hesitant to ask for support for fear of being considered incompetent. This fact is particularly evident in less self-efficacious teachers. Given the global emergency transition to online education and the compulsory shifts in teaching methods triggered by the pandemic, such teachers found it challenging to discharge their duties. However, the challenges faced by teachers who shifted from face-to-face classes to online classes during the coronavirus pandemic were not much different. It is argued that teachers carrying higher self-efficacy in a traditional classroom setting may develop various insights on self-efficacy during online learning such as acclimating to a home environment in teaching and absence of direct interaction with students (Sokal, Trudel & Babb 2020)

2.3.6 Instructional strategies for Online Classroom Management

There are several significant strategies for online classroom management suggested by experts. First of all, Virtual Space. Teachers can create a corner in the e-learning management system where students can look for their agendas, rubrics, assignments, frequently asked questions, announcements etc. This can also curb the miscommunication between teachers and students. It is equally important to educate students on where this space is located and guide them on how to use it (Bridgers, 2021).

Second, Clear and Effective Communication. It is very important to keep the communication for parents and students very clear and simple, as there would be too

many information floating online. Some effective tools to communicate with families would be through announcements, weekly updates, Newsletter or Class Dojo (Bridgers, 2021).

Third, Building an Engaging experience. Since teachers and students are not physically present together in a building, it is important to catch student attention and the best way to do that is to develop a learning experience which is very engaging for the students. Teachers should take efforts to understand the strengths and weaknesses of students a develop a plan that can create an engaged learning (Bridgers, 2021).

Fourth, Establishing Expectations: An effective classroom management could happen only if both parties involved are mutually cooperative. Apart from continuously supporting students, the teachers also must establish their expectations from the students about the objectives they have to meet (Weis, 2021).

Fifth, Developing Routines, Discipline and Etiquettes: It is highly significant to be systematic, disciplined, and consistent from teachers and students 'ends to submit work assignments and receive feedback on time. Teachers should have an open-door policy where students can contact them when they would like to. Teachers and students should set up norms of discipline and etiquettes such as avoiding disruptions like background noise, ethical use of cameras, awareness on plagiarism; well preparedness of topics for discussion and so on. This will help in the smooth running of the online teaching (Weis, 2021).

2.4 Teacher self-efficacy (and online) in the middle eastern
2.4.1 Teacher Self-Efficacy

An increasing amount of research has been administered regarding teacher self-efficacy (Rabei et al., 2020; Zheng et al., 2020; Altun, 2007; Alqurashi, 2006; AlHasni, 2017). One study examined 84 novice teachers and adopted English language teachers' self-efficacy beliefs in Oman's technology college (AlHasni, 2017). The researcher employed five diary surveys, established TSE differences between novice and experienced teachers, most specifically in the efficacy levels within instructional strategies. The highest efficacy mean scores were observed within the classroom management domain, and the lowest efficacy means scores within the student engagement domain.

Furthermore, Robertson and Al-Zahrani (2012) evaluated the TSE of 325 pre-service tutors in integrating computer technology at King Abdulaziz University. Through quantitative research, the analysis demonstrated that teachers, in general, possess high-level computer skills. Their self-efficacy levels as university tutors improved with adequate computer knowledge and IT qualifications.

2.4.2 Self-Efficacy in Online Teaching

Although there are many studies that successfully examined teaching self-efficacy, little research has been carried out regarding self-efficacy within an online context. In a recent study conducted by Sokal, Trudel, and Babb (2020) using a mixed-method approach, 1,626 school teachers and university teachers in Canada completed a survey conducted at two early points during the COVID-19 pandemic. It was

discovered that participants were shown to have low to intermediate levels of sel-efficacy in both educational methods and student interaction domains. However, in the classroom management domain of online teaching, self-efficacy improved across the data collection points.

Moore-Hayes (2011) disclosed that novice teachers perceived themselves as less productive in utilizing technology for teaching purposes. Similarly, Wong (2003) explored teachers' self-efficacy levels in online classes. Participants revealed low self-efficacy levels in undertaking online tasks while finding online tasks more demanding than traditional classroom tasks.

2.5 Gap Analysis

Despite the self-efficacy concept receiving considerable interest from scholars and scientists, some significant gaps have not yet been addressed. Most of the studies conducted on self-efficacy exclusively focused on the western states, specifically the US, Italy, Poland, Hungary, and France (Çelik et al., 2020). Furthermore, the studies conducted in the middle east are too limited to conceptualize critical theories. Moreover, most studies that focused on investigating self-efficacy sampled only college and high school students (Mozahem et al., 2020). Thus, there is a demand for more research on teacher efficacy for online teaching. Since self-efficacy is domain-specific, it is essential to utilize various measurements to incorporate multiple domains (Mozahem et al., 2020). However, researchers have not yet reached a consensus on what measurement tool is deemed the best when measuring self-efficacy in an academic setting.

CHAPTER 3: METHODOLOGY

This study focuses on the current self-perceptions of teachers regarding their efficacy of online teaching regarding the pandemic. This chapter aims to establish the research methodology that was utilized in the study. It covers participants information, population and sample size, study design, data collection instruments, procedures, and the ethical consideration applied in the study.

The following research questions indicated in this study:

1. How do primary school teachers in Qatari governmental schools report their self-efficacy of online teaching during the pandemic?
2. Is there a significant difference in online teaching efficacy according to these variables: age, gender and years of experience?

3.1 Research design

In this exploratory study, the researcher employed the quantitative research paradigm to answer the subsequent questions: How do primary teachers in Qatari government schools report their online teaching self-efficacy during a pandemic context? Is there a significant difference in online teaching efficacy according to these variables: age, gender, years of experience? The quantitative design was found the most appropriate approach; as it provides an unbiased and fair data measurement (Robinia & Anderson, 2010; Tschannen-Moran and Hoy, 2001).

Furthermore, recent research has shown that participants have more to say than that which is mentioned in close-ended questions (AlHasni, 2017). As a result, open-ended questions were introduced at the conclusion of the survey to allow for further

elaboration. There are four open-ended questions within the qualitative part of this study.

3.2 Population and participants

Overall, the population of teachers in Qatar's government schools is nearly 12,500 (PSA, 2019). Participants in this study have been identified as the government primary teachers in Qatar due to their crucial contributions to the students' educational achievements. Besides, almost half (52%) of Qatar's government school teachers are primary school teachers (PSA, 2019), whereas analysis on their self-efficacy remains scarce.

According to the Qatar Statistical Profile (PSA, 2019), there are 6500 primary teachers in Qatar. Out of these, 516 are male teachers, constituting just 8 percent of the total population. On the other hand, female teachers account for 5,984 of the targeted population, or 92 percent (see table 1). The primary government school teachers are divided across 122 government schools, with 63 boys' schools and 59 girls' schools (PSA,2019).

Table 1. Population and respondents' information

	Population		Respondents		Response rate	Sampling Error
	N	%	N	%	%	%
Male	516	8%	56	11%	11%	2.3%
Female	5984	92%	458	89%	8%	
Total	6500	100%	514	100%	8%	

The research had a total of 903 teachers as participants. Just 514 teachers out of 903 responded to the survey voluntarily. The response rate is 8%, as shown in Table 1, resulting in a 2.3 percent sampling error. Table 2 displays the respondents' demographic data, which included gender, age, years of teaching experience, and years of online teaching experience.

Gender

As seen in (Table 2), female teachers make up the vast majority of participants (89.1%), whereas male teachers constitute less than a quarter (10.9%). In this study there is an uneven gender representation among respondents, this refers to the 7.9% of male primary teachers in all government schools compared to the 92.1% of female primary teachers (PSA,2019)

Age

Data regarding age shows that most of the participants are between 31 and 40 years old (44.0%), while 34.2% of them are above 40. The rest of the participants are between 21 and 30 years old and they represent 21.8% of all participants (See Table 2).

Teaching Experience

The data also shows that more than half of experienced teachers have more than ten years of experience (55.,4%) while 26.3% have between 5 and 10 years of experience. The lowest proportion applies to new teachers with fewer than five years of experience, who account for 18.3% of all participants (See Table 2).

Online Teaching Experience

Only 3.3% of those who participated have more than five years of experience teaching online. Furthermore, only 1.4% of participants have between 3 and 5 years of experience, and they are in the minority, while the majority of participants (95%) have no experience with online teaching (See Table 2).

Table 2. Demographic Data

Characteristic	Levels	Frequency	Percent N %
Gender	Female	458	89.1%
	Male	56	10.9%
Age	21- 30	112	21.8%
	31- 40	226	44.0%
	41- above	176	34.2%
Teaching Experience	5- 10 Years	135	26.3%
	Less than 5 years	94	18.3%
	More than 10 years	285	55.4%
Online Teaching Experience	3 - 5 years	7	1.4%
	Less than 3 years	490	95.3%
	More than 5 years	17	3.3%

3.3 Instrument

The study by Bandura (1997) and Bong & Skaalvik (2003) laid the foundations for understanding the concept of self-efficacy in the academic context. However, the existing literature did not reveal any tool that would specifically aid in the measurement

of emergency online teaching efficacy (AlHasni, 2017). Thus, Teachers' Sense of Efficacy Scale (TSES) has been accessed for the survey tool in the current study after receiving permission from the main researcher. Items in the scale were merged from a wide review of all established studies and current teacher efficacy measures (Tschannen-Moran and Hoy's, 2001). Besides, TSES items were guided by the social cognitive theory of Albert Bandura (1977), which is the theory that the current study is placed within.

The scale developers Tschannen-Moran and Hoy's (2001) held a seminar which included 2 researchers and 8 experienced teachers, to study the unpublished instrument used by Bandura (undated), and they found that the items distribution in the seven sub-scales were inaccurate and did not reflect the real teacher's tasks that shape their working life. Based on this, the group decided to adopt a scale based on the Bandura's scale, but with an extended range of teacher skills.

Tschannen-Moran and Hoy (2001) checked the scale in three trials after it was finalized. Three separate surveys were administered to teachers and preservice teachers The first study reduced the scale from 52 to 32 items, and the second study, reduced the scale even further to 18 items divided into three groups.

Consequently, 18 new items were created and reviewed. Following the completion of the scale, the group agreed to create two measuring forms: a short form with 12 items and a long form with 24 items. The long scale was broken down into three sections (as shown in table 3).

Table 3. Distribution of the scale items

Scale Sections	Item Numbers	Total No. of Items
Student Engagement	1, 2, 4, 6, 9, 12, 14, 22	8
Online Classroom Management	3, 5, 8, 13, 15, 16, 19, 21	8
Online Instructional Strategies	7, 10, 11, 17, 18, 20, 24	8

The questionnaire items were based on a frequency rating scale of 9-points, varying from (1) "Nothing" to (9) "A Great Deal" It was written in both English and Arabic. Since Arabic is the mother tongue of the majority of the targeted participants, the researcher created the survey in English and then translated it into Arabic to suit the Qatari framework. The researcher proceeded to translate the Arabic version back to English to ensure that ideas and concepts had the same meaning in both languages.

3.3.1 Validity:

Content validity was tested and confirmed by experts fluent in both Arabic and English at the College of Education, two professors were experts of research in school work; Senior Professional Development Specialists at the National Center for Educational Development (See appendix A). The survey was given to professors and specialists to review and they commented on the items regarding clarity with relation to the study's aims.

While finalizing the questionnaire, some modifications have been made according to the experts' suggestions. Some statements have been adapted to be relevant to teachers' responsibilities in Qatari schools within the online context (19, 22, 23) (See

Appendix B). Modifications also changed wording in the items to be suitable within an online context, placing focus on changing statement such as: "in your classroom" to "in your online course". Statement (24) has been deleted and some statements were shortened to avoid redundancy and to be easier to understand and practically answered (2, 3, 7, 13, 14). In addition, statement 17 "How much can you do to adjust your online lessons for different learning styles?" has been changed to "How much can you do to make your online lessons meet learning styles?".

3.3.2 Constructive validity

Constructive Validity was insured by conducting Confirmative Factor Analysis (CFA) using AMOS program 26.

According to the results reported in figure (1) and table 4 below, for all factors (F1 online student engagement, F2 online classroom management, F3 online instructional practices), the factor loadings for all subcategories were significant and exceeded the suggested cutoff level of 0.3 (Hasan, 2019).
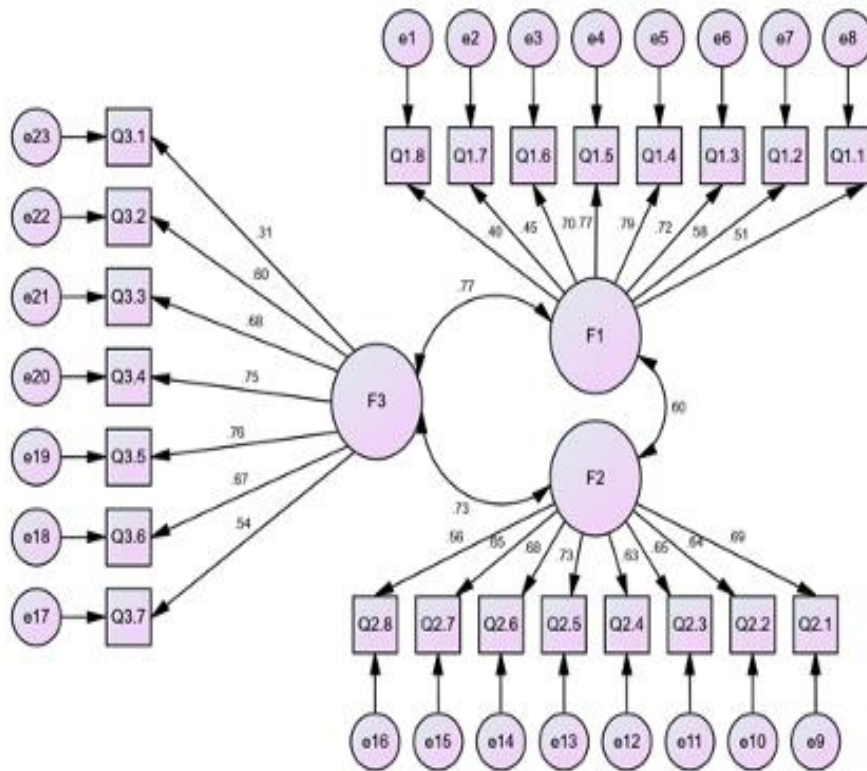
Figure 1. The results of Confirmative factor analysis using AMOS program.

Table 4. Items loading to each factor based on Confirmative factor Analysis using AMOS program.

	Item		factor	Load
Q1.1	How much can you do to help your students think critically in an online class?	<---	F1	0.51
Q1.2	How much can you do to get through to students in an online class?	<---	F1	0.584
Q1.3	How much can you do to motivate students who show low interest in online work?	<---	F1	0.724
Q1.4	How much can you do to get students to believe that they can do well in an online class?	<---	F1	0.795
Q1.5	How much can you do to help students' value of online learning?	<---	F1	0.775
Q1.6	How much can you do to foster individual student creativity in an online course?	<---	F1	0.698

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	Item		factor	Load
Q1.7	How much can you do to improve lower achievers in an online class?"	<---	F1	0.446
Q1.8	How well can you facilitate collaborative learning online?	<---	F1	0.4
Q2.1	How much can you do to control disruptive behavior (e.g. disrespectful posting or failure to adhere to outline policies for posting online)?	<---	F2	0.693
Q2.2	To what extent can you make your expectations clear about student behavior in an online class?	<---	F2	0.642
Q2.3	How well can you establish routines (e.g. facilitate or moderate student participation) in coursework to keep online activities running smoothly?	<---	F2	0.649
Q2.4	How much can you do to get students to follow the established rules for assignments during an online class?	<---	F2	0.635
Q2.5	How much can you do to control students dominating online discussions?	<---	F2	0.731
Q2.6	How well can you organize an online course (e.g. convey expectations; standards; course rules) with each group of students?	<---	F2	0.676
Q2.7	How well can you facilitate student responsibility for online learning?	<---	F2	0.649
Q2.8	How well can you respond to defiant students in an online setting?	<---	F2	0.565
Q3.1	How well can you respond to questions from online students	<---	F3	0.308
Q3.2	How much can you do to gauge student comprehension of what you have taught in an online mode?	<---	F3	0.604
Q3.3	How well can you craft questions or assignments that require students to think by relating ideas to previous knowledge and experience?	<---	F3	0.685
Q3.4	How much can you do to make your online meet learning styles?	<---	F3	0.75
Q3.5	How much can you do to use a variety of assessment strategies for an online course?	<---	F3	0.765

	Item		factor	Load
Q3.6	To what extent can you provide an alternative explanation or example when students in an online class seem to be confused?	<---	F3	0.671
Q3.7	How well can provide good online learning experiences for students?	<---	F3	0.535

3.3.3 Reliability:

The scale developers Tschannen-Moran and Hoy's (2001) reported the scale's reliability as follows: total score reliability of Cronbach's .94 alpha. The reported Cronbach's alpha coefficient values for teachers' self-efficacy subscales ranged from.87 to .91, respectively, indicating a high internal consistency (see Table 5).

The factor analysis revealed three reasonably correlated variables. The Reliability of these subscales was stated as follows: (a) efficacy in instructional practices, 0.91; (b) efficacy in student management, 0.90; and (c) efficacy in student engagement and interaction, 0.87.

Table 5. Internal consistency of the TSES (Tschannen-Moran and Hoy's, 2001)

	Long Form			
	Mean	SD	alpha	Mean
TSES	7.1	.94	.94	7.1
Engagement	7.3	1.1	.87	7.2
Instruction	7.3	1.1	.91	7.3
Management	6.7	1.1	.90	6.7

The researcher has tested the reliability after the instrument modifications were done and Cronbach's alpha was established as 0.92 for the whole survey, with subscale reliabilities of self-efficacy in student engagement, 0.83; efficacy in classroom management, 0.86; and efficacy in instructional strategies, 0.81 (see table 6).

Table 6. Reliability Statistics of the survey.

Self-efficacy domains	Cronbach's Alpha	N of Items
Student Engagement	0.83	8
Classroom management	0.86	8
Instructional Strategies	0.81	7
Whole Survey	0.92	23

3.4 Data Collection

The data for this study was collected using a web-based data collection system. It is a free tool that can be accessed from any location and saves time for participants (Ilieva, Baron, & Healey, 2002; AlHasni, 2017). The researcher met with seven primary school principals to receive their permission to administer the survey to their teachers to inform them that they needed to fill it out as part of the data collection process and to increase the number of respondents. Gender, age, years of teaching experience and years of online teaching experience were among the five demographic variables collected. No names have been placed on the survey in order to ensure confidentiality and anonymity.

Primary teachers in Qatari government schools received a link via social media, WhatsApp, and Instagram messages on October 14, 2020, that contained an explanation of the research purpose and its population. After two weeks, a follow-up message was sent to the non-respondents to remind them about the importance of their participation.

To appreciate and encourage participation in this research, the teachers were offered an incentive. Each person who completed the survey was entered into a drawing

to win one of three prizes from the (3afia) home company. According to Dillman (2000), incentives increase the response rate of the most desirable data.

3.5 Data Analysis

The descriptive data was processed using the Statistical Package for Social Sciences (SPSS) version 26. Tables were used to define the data; the mean, standard deviation, and weighted average of each measure item were reported and compared to the instrument manual's normative data. Multiple comparisons based on LSD tests and quantitative tests such as t-test, ANOVA and post hoc tests were used to discuss relationships between teacher efficacy scores and the demographic variables. Furthermore, Alpha Cronbach was used for reliability and Confirmative factor analysis was used for Constructive validity.

3.6 Ethical considerations

The researcher was open-minded in that she freely shared her information and ideas without fear of reprisal, while also recognizing the value of copyright protection. Thus, the researcher has been considerate in making sure that every single piece of information is original and has not borrowed phrases, or distorted research, such as concepts, methods, without knowing where the material has been collected. Hence, after gathering information from credible sources, the researcher rephrased and presented it in her own terms to prevent plagiarism, following the APA style citation guidelines.

The researcher withheld the study until all approvals were declared from the Institutional Review Boards (IRB). She sent her research proposal to QU- IRB. The

researcher then sent the survey link to the teachers via WhatsApp after obtaining IRB approval, along with a summary of the research purpose and questions.

Furthermore, the researcher had assured the participants' rights and wellbeing by ensuring that the study would have no potentially negative consequences on any of the participants. The participants also received a consent form to determine whether they would like to take part in the study. The invitation message presented a brief summary of the research and its central questions. The message also informed the participants about their right to contact the researcher and raise questions. Participants were not compelled to take part in the study; it was entirely optional. For ease of data collection, the survey was written in both Arabic and English in a concise and understandable manner.

Furthermore, the researcher has secured the participants' privacy by maintaining their personal details and responses such that only the researcher has access to them. The researcher did not disclose the respondents' ethnic or cultural backgrounds, nor did he reveal any other personal information about the study. All data collected will be relinquished once the analysis is complete.

CHAPTER 4: FINDINGS

The aim of this study is to look into the degree of self-efficacy among primary teachers in regards to emergency online teaching. Furthermore, the research aimed to determine if there are variations in self-efficacy in relation to variables such as: gender, age and teaching experience. The results of the research questions within three aspects of self-efficacy are recorded in this chapter: student engagement, classroom management and instructional strategies.

4.1 Findings according to research questions
4.1.1 Research question 1

How do primary teachers in Qatari governmental schools report their self-efficacy of online teaching in a pandemic context?

The researcher used SPSS program to find descriptive statistics to answer question one. As the scale was 9-points ranging from nothing (1) to a great deal (9), the scores were categorized into five categories starting from very low to very high (see table 7).

Table 7. Scoring Key

Level	Mean	Weighted Mean
Very Low	1- 2.59	1-28.9%
Low	2.60- 4.19	29%- 46.9%
Middle	4.20- 5.79	47 - 63.9%
High	5.80- 7.39	64- 81.9%
very High	7.40 -9	82- 100%

Table 8. below displays participants' responses (N=514) scores of the means (M), standard deviations (SD), and weighted average (WA) for the three domains. As shown in table 8, the overall results correspond to the high level of self-efficacy

category among teachers in the three domains, where the mean is 6.69 and represents 74% of the total. However, teacher self-efficacy levels varied among the three domains. The highest level of self-efficacy was related to the instructional strategies' domain (M= 6.84, SD= 1.314) which corresponds to the weighted average of 76%, while the lower level was related to student engagement (M= 6.78, SD= 1.329) with the weighted average of 75%, and the lowest was related to the classroom management domain (M= 6.46, SD= 1.544) with the weighted average of 72%.

Table 8. Means, Standard Deviations and Weighted Average of self-efficacy domains

	N	Mean	Std. Deviation	Std. Error Mean	Weighted Average
Student Engagement	514	6.78	1.329	0.059	75%
Classroom Management	514	6.46	1.544	0.068	72%
Instructional Strategies	514	6.84	1.314	0.058	76%
Total	514	6.69	1.215	0.054	74%

A paired sample t-test has been conducted to determine the differences between the three domains; Instructional Strategies (IS), Classroom Management (CM,) and Student Engagement (SI). Table 9 shows that there is a statistically significant difference between IS (M= 6.84, SD= 1.313) and CM domain (M= 6.46, SD= 1.544), where the p-value is less than 0.05 and t= 7.110. Similarly, there is a statistically significant difference between SE (M= 6.78, SD= 1.329) and CM domain (M= 6.46, SD= 1.544), where the p-value is less than 0.05 and t= 5.393. However, the differences between SE combined with IS is not significant, where the p-value is more than 0.05 and t= -1.281.

Table 9. Paired Samples T-Test

	Mean	N	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Instructional Strategies (IS)	6.84	514	1.31366	0.05794			
Classroom Management (CM)	6.46	514	1.54406	0.06811	7.110	513	0.000
Student Engagement (SE)	6.78	514	1.32938	0.05864			
Classroom Management (CM)	6.46	514	1.54406	0.06811	5.393	513	0.000
Student Engagement (SE)	6.78	514	1.32938	0.05864			
Instructional Strategies (IS)	6.84	514	1.31366	0.05794	-1.281	513	0.201

Figure 2. below concludes that the three self-efficacy domains deviate from each other. Still, although reaching a statistical significance, there was no difference in mean scores between the SE and IS domains. This figure also illustrates that both IS and CE are higher than the CM domain.
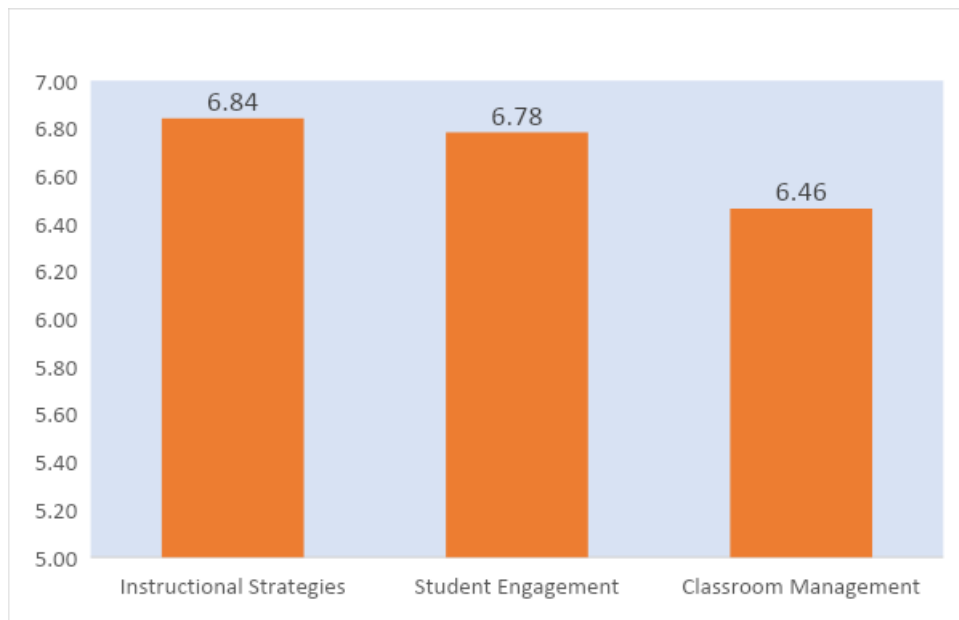
Figure 2. Means of self-efficacy by domains

Table 10. displays means, standard deviations, and weighted averages of the responses for all self-efficacy items in the three domains. In each domain, results are ordered according to the mean value, from the highest value to the lowest.

In general, the highest mean of the teachers' responses among the whole items was related to "How well can you respond to questions from online students?" (M= 7.90, (8,8%) and it is the only one which corresponds to the very high level of the self-efficacy category. However, the remaining 22 items all correspond to the high level of self-efficacy category, where their means are ranging between 5.97 (66%) to 7.30 (81%). So, the lowest mean of the teachers' responses among the whole items was related to "How much can you do to control disruptive behavior (e.g., disrespectful posting or failure to adhere to outline policies for posting online)?" (M= 5.97, (66%))

Starting with the first domain (student engagement), the highest mean was related to "How much can you do to motivate students who show low interest in online work?" which corresponds to the weighted average of 79%. In contrast, the lowest mean of the item responses was related to "How much can you do to help your students think critically in an online class?". Regarding the second domain (classroom management) highest mean was related to "How well can you respond to defiant students in an online setting?" and it corresponds to the weighted average of 81%. Whereas the lowest mean was related to "How much can you do to control disruptive behavior (e.g., disrespectful posting or failure to adhere to outline policies for posting online)?, with a weighted average of 66%. Among the items in the third domain (Instructional Strategies), the highest mean was related to "How well can you respond to questions from online students?" with the weighted average of 88%, While the lowest mean was related to "How well can provide good online learning experiences for students?".

Table 10. Means, Standard Deviations, and Weighted Average of self-efficacy items

	N	Mean	Std. Deviation	Weighted Average
Domain 1: Efficacy for student engagement				
How much can you do to motivate students who show low interest in online work?	514	7.08	2.038	79%
How much can you do to help students' value of online learning?	514	6.96	1.964	77%
How much can you do to get through to students in an online class?	514	6.90	1.834	77%
How much can you do to get students to believe that they can do well in an online class?	514	6.89	1.943	77%
How much can you do to improve lower achievers in an online class?"	514	6.87	1.874	76%
How much can you do to foster individual student creativity in an online course?	514	6.82	1.998	76%
How well can you facilitate collaborative learning online?	514	6.44	2.108	72%
How much can you do to help your students think critically in an online class?	514	6.28	2.084	70%
Domain 2: Efficacy for classroom management				
How well can you respond to defiant students in an online setting?	514	7.30	1.970	81%
How well can you facilitate student responsibility for online learning?	514	6.65	2.057	74%
How much can you do to get students to follow the established rules for assignments during an online class?	514	6.63	2.093	74%
How well can you establish routines (e.g., facilitate or moderate student participation) in coursework to keep online activities running smoothly?	514	6.48	2.065	72%
How well can you organize an online course (e.g., convey expectations; standards; course rules) with each group of students?	514	6.44	2.186	72%
How much can you do to control students dominating online discussions?	514	6.14	2.310	68%
To what extent can you make your expectations clear about student behavior in an online class?	514	6.09	2.097	68%
How much can you do to control disruptive behavior (e.g., disrespectful posting or failure to adhere to outline policies for posting online)?	514	5.97	2.651	66%
Domain 3: Efficacy for instructional strategies				
How well can you respond to questions from online students?	514	7.90	1.624	88%
To what extent can you provide an alternative explanation or example when students in an online class seem to be confused?	514	6.87	1.943	76%

	N	Mean	Std. Deviation	Weighted Average
How much can you do to gauge student comprehension of what you have taught in an online mode	514	6.72	1.837	75%
How well can you craft questions or assignments that require students to think by relating ideas to previous knowledge and experience?	514	6.66	2.051	74%
How much can you do to make your online meet learning styles?	514	6.63	1.944	74%
How much can you do to use a variety of assessment strategies for an online course?	514	6.59	1.925	73%
How well can you provide good online learning experiences for students?	514	6.52	2.054	72%

4.1.2 Research question 2

Is there a significant difference in online teaching efficacy in relation to variables: age, gender, years of experience, and number of online teaching experiences?

To respond to the subsequent inquiry, the analyst directed a t-test, ANOVA, and post hoc tests to decide any critical contrasts between demographic variables and self-efficacy levels.

Teacher self-efficacy and gender

Table 11 below demonstrates the t-test results on teachers' self-efficacy beliefs by gender. Independent Sample t-test was used to assess the comparability between the three efficacy domains with gender. For male (M= 6.5 (72%), SD=1.17), for female (M=6.7 (75%), SD=1.21).

By using the independent t-test, results did not reveal a gender difference with regards to any of the three domains: student engagement domain (t= -0.99, df= 512, p= 0.318<0.05), classroom management (t=-0.96, df=512, p=0.334<0.05) and instructional strategies (t=-1.01, df=512, p=0.310<0.05).

Table 11. Independent Sample T-test results of teacher self-efficacy beliefs by gender (group samples test)

Domain	Gender	N	Mean	Weighted Average	Std. Deviation	t	Df	Sig. (2-tailed)
Student Engagement	Male	56	6.61	73%	1.1254	-0.999	512	0.318
	Female	458	6.80	76%	1.3519			
Classroom Management	Male	56	6.27	70%	1.6386	-0.968	512	0.334
	Female	458	6.49	72%	1.5324			
Instructional Strategies	Male	56	6.67	74%	1.3247	-1.016	512	0.310
	Female	458	6.86	76%	1.3123			
Total self-efficacy	Male	56	6.51	72%	1.1771	-1.143	512	0.254
	Female	458	6.71	75%	1.2193			

Teacher self-efficacy and age

Regarding age, table 12 illustrates the ANOVA test results, which were conducted to compare teachers' beliefs in relation to years of age. Years of age were divided into three levels: 21- 30 years, 31- 40, and 41. The total mean and standard deviation for teachers who are between 21- 30 years old are (M= 6.5, SD= 1.31). While the total mean and standard deviation for teachers who are between 31- 40 years old are (M= 6.7, SD= 1.28) and the total mean and standard deviation for teachers who are above 40 years old are (M= 6.7, SD= 1.22). The ANOVA test results indicated no significant difference between the three domains and the total of self-efficacy and years of age (F=0.133, p=0.875> 0.05). (see table 12)

Regarding the student engagement domain, the self-efficacy of teachers between 21 and 30 years old (M=6.6, SD=1.18) embodies 74% and the self-efficacy of teachers between 31-40 years old (M=6.7, SD=1.41) embodies 75%. In comparison, the self-efficacy believes of teachers over 40 years of age (M=6.9, SD=1.28) embodies 77%.

According to ANOVA test results, there is no significant difference between the student engagement domain and years of age (F=1.770, p=0.171> 0.05). (see table 12)

In the classroom management domain, teachers between the ages of 21 and 30 (M=6.3, SD=1.37) have 70% self-efficacy, while teachers between the ages of 31 and 40 (M=6.5, SD=1.53) have 73% efficacy beliefs. Teachers over the age of 40, on the other hand, exhibit self-efficacy levels of 72% (M=6.4, SD=1.66). There was no important relationship between the classroom management domain and age (F=0.874, p=0.418> 0.05). (See Table. 12) In the third domain, instructional strategies, self-efficacy levels were equivalent among teachers of all ages, accounting for 76 percent of the total. Self-efficacy of teachers between the ages of 21 and 30 (M=6.8, SD=1.20), and efficacy beliefs of teachers between the ages of 31 and 40 (M=6.8, SD=1.36), for example, whereas efficacy beliefs of teachers over 40 (M=6.8, SD=1.31). There was no major distinction noted between the domain of instructional methods and years of age (F=0.133, p=0.875> 0.05). (See Table. 12)

Table 12. ANOVA test result of teacher self-efficacy believes by age.

	Age	N	Mean	Std. Deviation	Std. Error	Weighted Average	F	Sig
Student Engagement	21- 30	110	6.64	1.183	0.113	74%		
	31- 40	226	6.75	1.415	0.094	75%	1.770	0.171
	41- above	176	6.93	1.288	0.097	77%		
Classroom Management	21- 30	110	6.30	1.375	0.131	70%		
	31- 40	226	6.54	1.532	0.102	73%	0.874	0.418
	41- above	176	6.47	1.664	0.125	72%		
Instructional Strategies	21- 30	110	6.80	1.202	0.115	76%		
	31- 40	226	6.84	1.364	0.091	76%	0.133	0.875
	41- above	176	6.88	1.319	0.099	76%		
Total self-efficacy	21- 30	110	6.57	1.055	0.101	73%		
	31- 40	226	6.70	1.283	0.085	74%	0.133	0.875
	41- above	176	6.75	1.223	0.092	75%		

Teacher self-efficacy and years of teaching experience

Regarding teaching experience, table 13 illustrates the ANOVA test results, which were conducted to compare teachers' beliefs of self-efficacy in relation to the years of teaching experience. Years of experience were divided into three levels: Less than 5 years, 5- 10 years, and more than 10 years.

Regarding the total efficacy, the total mean and standard deviation for teachers who are with less than 5 years of experience are (M= 6.41, SD= 1.18). While the total mean and standard deviation for teachers who are with 5-10 years of experience (M= 6.46, SD= 1.18) and the total mean and standard deviation for teachers who are with more than 10 years of experience are (M= 6.88, SD= 1.20). The ANOVA test results indicated significant difference in the total of self-efficacy among the three levels of teaching experience (F=8.522, p=0.000 < 0.05) (see table 13).

LSD Post hoc test (multiple comparison) was used to determine the differences between the three level of teaching experience on the total self-efficacy (see table 14). Based on the LSD test (table 14) the differences found between teachers with more than 10 years of experience and 5-10 years (mean difference =0.41498, p=0.001>0.05). Also, there is a significant difference between teachers with more than 10 years of experience and less than 5 years (mean difference =0.46947, p=0.001>0.05). It can be deduced from this that the more years of experience teachers have, the more self-efficacy they perceive. Figure 3 highlights the difference in teachers' self-efficacy as a result of their years of teaching experience.

Table 13. ANOFA-test result of teacher self-efficacy beliefs by years of experience.

	Experience	N	Mean	Std. Deviation	Std. Error	F	Sig (p)
Student Engagement	Less than 5 years	94	6.4548	1.36917	0.14122	7.752	0.000
	5- 10 years	135	6.5852	1.34851	0.11606		
	More than 10 years	285	6.9820	1.27530	0.07554		
Classroom Management	Less than 5 years	94	6.2354	1.47946	0.15259	7.419	0.001
	5- 10 years	135	6.1352	1.45077	0.12486		
	More than 10 years	285	6.6934	1.57327	0.09319		
Instructional Strategies	Less than 5 years	94	6.5729	1.33954	0.13816	4.433	0.012
	5- 10 years	135	6.7175	1.32578	0.11410		
	More than 10 years	285	6.9895	1.28341	0.07602		
Total	Less than 5 years	94	6.4144	1.18721	0.12245	8.522	0.000
	5- 10 years	135	6.4689	1.18502	0.10199		
	More than 10 years	285	6.8839	1.20713	0.07150		

Table 14. Multiple Comparisons based on LSD Test.

Dependent Variable	Years of Experience	Years of Experience	Mean Difference (I-J)	Std. Error	Sig.
Student Engagement	More than 10 years	Less than 5 years	.52723[*]	0.15608	0.001
		5- 10 years	.39683[*]	0.13710	0.004
Classroom Management	More than 10 years	Less than 5 years	.45805[*]	0.18140	0.012
		5- 10 years	.55824[*]	0.15934	0.000
Instructional Strategies	More than 10 years	Less than 5 years	.41653[*]	0.15521	0.008
		5- 10 years	.27201[*]	0.13634	0.047
Total self-efficacy	More than 10 years	Less than 5 years	.46947[*]	0.14246	0.001
		5- 10 years	.41498[*]	0.12514	0.001
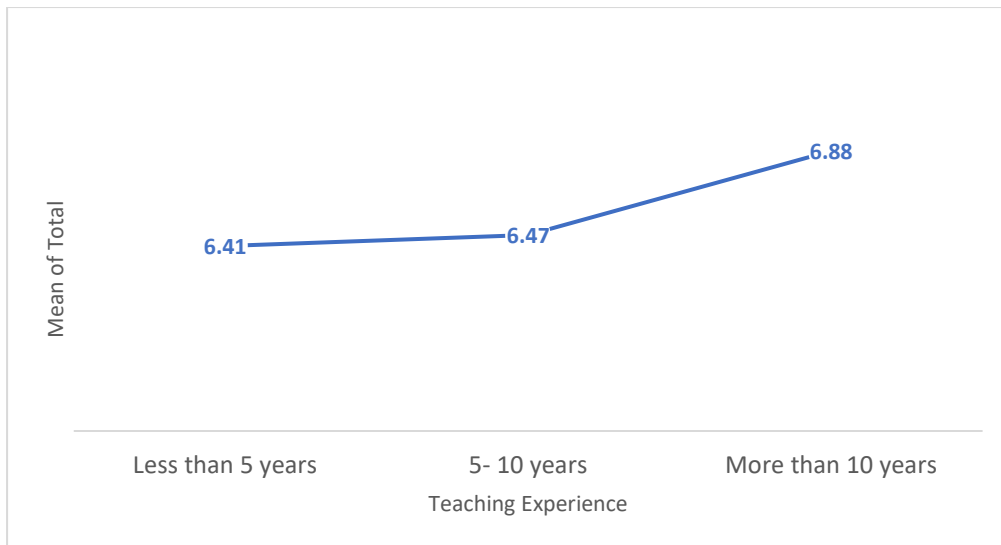
Figure 3. Mean of total based on the teacher experience

As shown in Figure 3, in contrast to teachers with 5-10 years of experience (M= 6.46, SD= 1.18) and teachers with less than five years of experience (M= 6.88, SD= 1.20), teachers with more than ten years of experience (M= 6.41, SD= 1.18) recorded levels of self-efficacy (Figure 3).

In terms of the student engagement domain, there were significant differences in this domain among the three levels of years of experience (F=7.752, p=0.000>0.05). The teacher experience with less than 5 years of experience (M=6.45, SD=1.36), teachers with 5- 10 years (M=6.58, Sd=1.34) and teachers with greater than 10 years of experience (M=6.98, SD=1.27)

Based on the LSD test (table 14) the differences found between teachers with more than 10 years of experience and 5-10 years (mean difference =0. 39683, p=0.004>0.05). Also, there is a significant difference between teachers with more than 10 years of experience and less than 5 years (mean difference =0. 52723, p=0.001>0.05). According to this data, the greater the number of years of experience, the higher the degree of self-efficacy. Figure 4 further highlights the major disparity in

teachers' self-efficacy beliefs in student engagement domain based on years of experience.
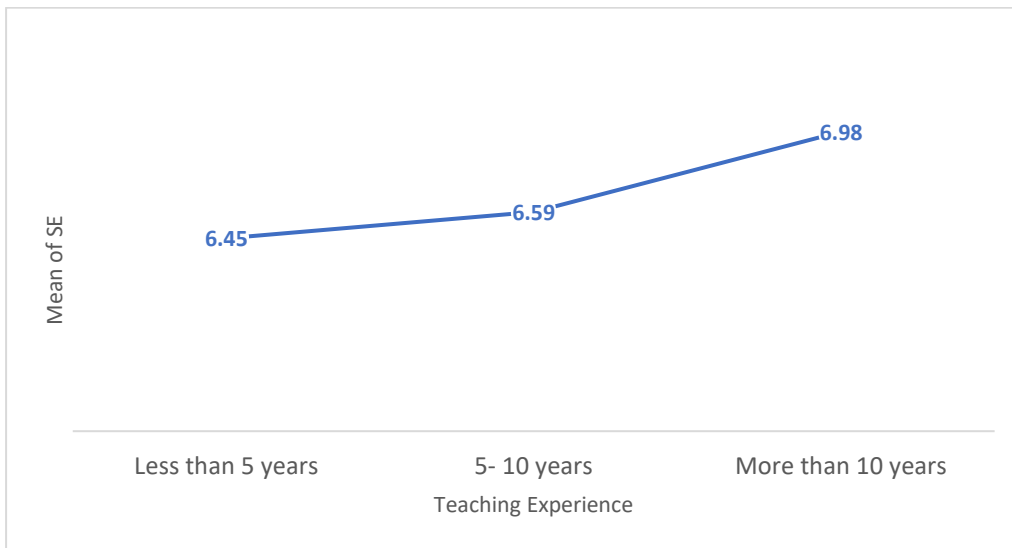
Figure 4. Mean of student engagement based on the teacher experience

With reference to Table 13, there is a significant difference in the classroom management domain among the three levels of teaching experience (F=7.419, p=0.001>0.05). Based on the LSD test (table 14) the differences found between teachers with more than 10 years of experience and 5-10 years (mean difference =0. 55824, p=0.000>0.05). Also, there is a significant difference between teachers with more than 10 years of experience and less than 5 years (mean difference =0. 45805, p=0.012>0.05). Figure 5 underlines the variation of teachers' self-efficacy beliefs in classroom management.
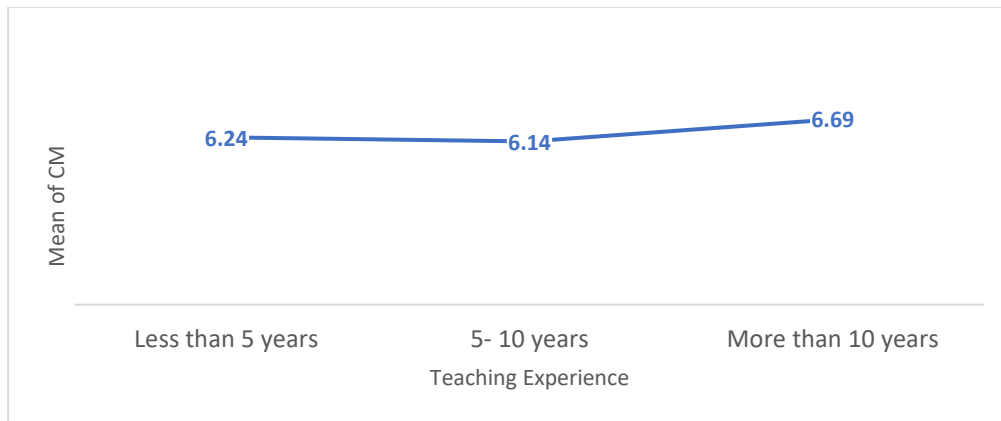
Figure 5. Mean of classroom management based on the teacher experience

Figure 5 stipulates that teachers with more than ten years of experience (M= 6.45, SD= 1.36) exhibited greater self-efficacy levels than teachers with 5-10 years of experience (M= 6.58, SD= 1.34) and teachers with less than five years of experience (M= 6.98, SD= 1.27) in classroom management domain.

Regarding the instructional strategies' domain, there were significant differences in this domain also among the three levels of years of experience (F=4.433, p=0.012>0.05). Based on the LSD test (table 14) the differences found between teachers with more than 10 years of experience and 5-10 years (mean difference =0.27201, p=0.047>0.05). Also, there is a significant difference between teachers with more than 10 years of experience and less than 5 years (mean difference =0.41653, p=0.008>0.05). Figure 6 underlines the variation of teachers' self-efficacy beliefs in the instructional strategies' domain.
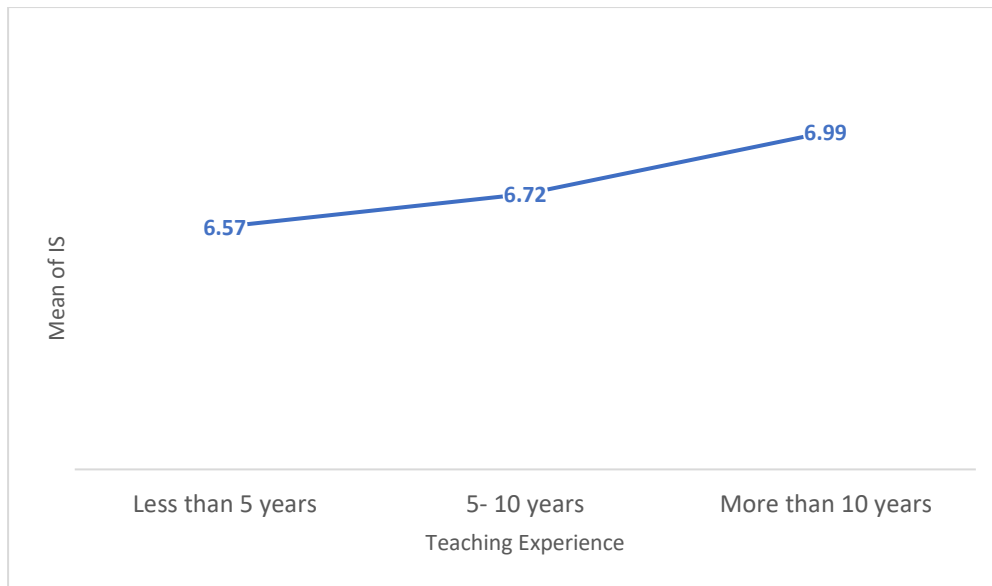
Figure 6. Mean of instructional strategies based on the teacher experience

Figure 6 also indicates a polarity between years of experience and self-efficacy levels in the instructional strategies' domain. This information is depicted through the self-efficacy level of teachers with less than five years of experience (M=6.57, SD=1.33) in contrast to teachers with 5- 10 years (M=6.46, Sd=1.18), with teachers carrying more than 10 years of experience exhibiting the highest levels of self-efficacy. (M=6.88, SD=1.20).

4.2 Qualitative Results

As part of the study's qualitative aspect, the researcher has appended four open-ended questions towards the end of the questionnaire to acquire a more elaborated perspective from the participants involved. The questions were the following: "What challenges have you encountered in online teaching during the pandemic period?"; "How did you cope with these challenges?"; "What support did you receive in online teaching during the pandemic period?" and "What support do you require to develop your self-efficacy

in distance education?". This data was critical in offering a comprehensive and in-depth view of the difficulties teachers face while teaching online, as well as the adverse impact these challenges have on self-efficacy levels.

Themes and codes were assigned by noting what participants frequently repeated in their responses (See Appendices C, D, E, F).

4.2.1 Open-ended question 1:

What challenges have you encountered in online teaching during the pandemic period?

Being cognizant of the challenges teachers face in online teaching is essential for understanding the key factors that affect self-efficacy levels as well as scoping the future landscape in regards to these challenges. An in-depth examination of the first open-ended question revealed three major themes that teachers face while conducting online classes: uncooperative parents, unmotivated students, and technical issues. (see figure 4.6).
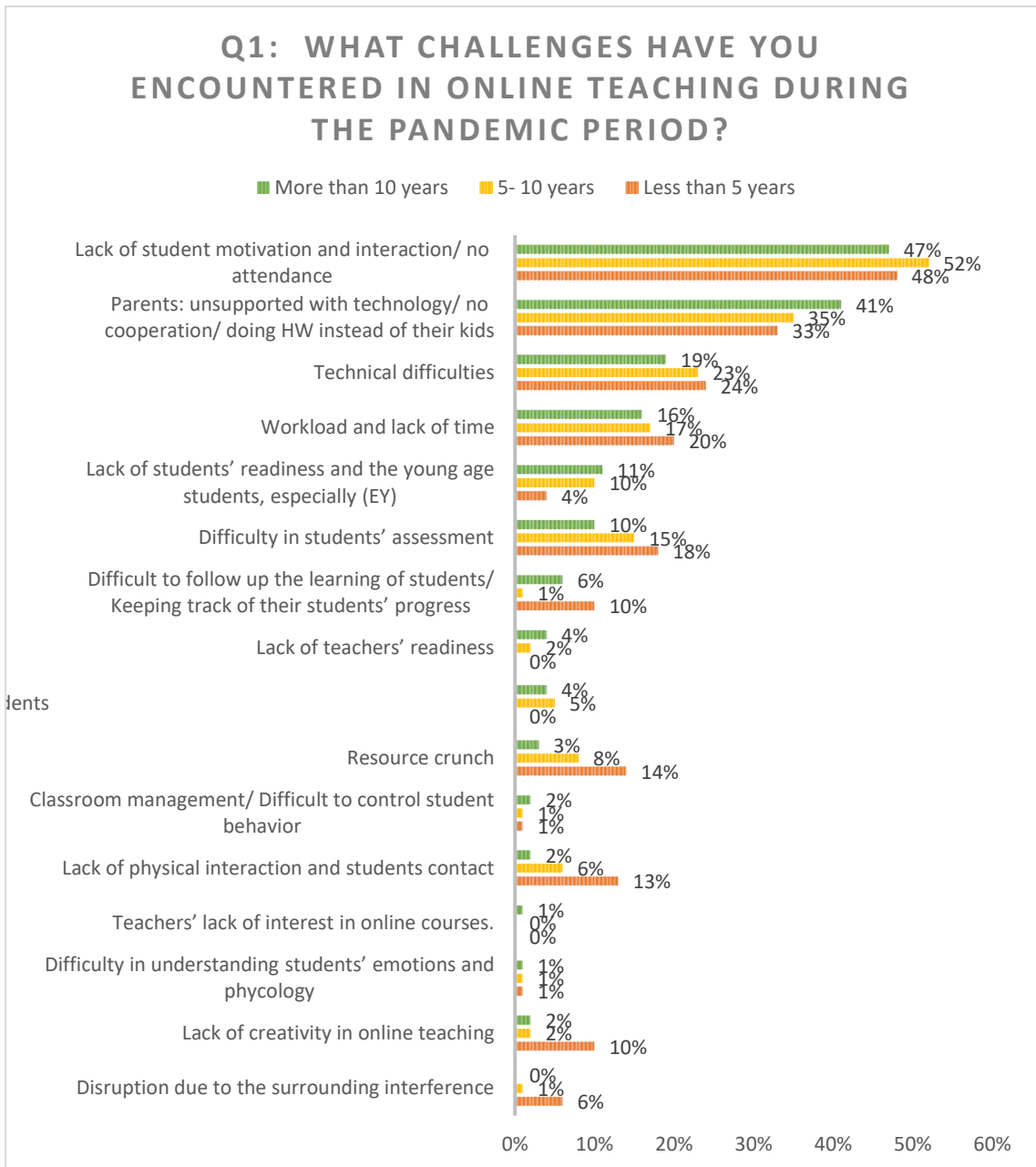
Figure 7. Main challenges faced by teachers in online teaching

Unmotivated students were a recurrent theme in primary teachers' responses, as shown in figure 7. The responses of 48% of inexperienced teachers, 47% of expert teachers, and 52% of teachers with 5 to 10 years of experience were in unison, suggesting that their students were unmotivated to learn and complete online tasks. One of the teachers who responded to the survey remarked:

"There is a lack of attendance during official school hours, decrease in student motivation and interaction despite the many incentives and online encouragement we provide to them." (A69, less than 5 years of experience).

Another teacher commented, "Creative teaching requires attendees" (C262, more than ten years of experience).

Furthermore, teachers could not capture their students' attention as they felt unable to interact with them physically and emotionally. Some teachers indicated that they struggled to understand their students' emotional responses due to the inaccessibility to their expressions through the camera.

The second recurring theme among primary teachers was uncooperative parents. The data presents 33% of novice teachers, 41% of expert teachers, and 35% of teachers between 5 and 10 years of experience encountered parents' struggles for various reasons. For example, some parents do not keep track of their children's progress, nor do they maintain regular contact with the teachers. Conversely, some parents fall short in technical skills, which was a key challenge, particularly for early-year students that required adult assistance with technology. One participant has listed the following challenges:

"The first being parents' lack of motivation to engage their children in online learning, the second being an unwillingness to complete assignments on time and the last being the unavailability of time for some parents to interact with their children's studies" (C223, more than ten years of experience).

The third problem that primary teachers often discussed in virtual learning was technological difficulties. Teachers struggled to keep a secure internet link and

manage the Teams platform accordingly. It was noted, for example, that the Teams application often caused delays in completing assignment uploads along with the loss of vital data such as informative videos and lessons.

Furthermore, many teachers reported the heavy workload and shortage of time as one of the most frustrating challenges they faced in online teaching. Some teachers reflected that a considerable amount of time was spent using the computer as many tasks required completion while also delivering live lessons simultaneously. As a result of this, they faced an imbalance between work and daily life.

Additionally, novice teachers explicitly referred to moments of disruption in online live classes due to surroundings on either side. Some teachers raised the issue of finding a quiet, comfortable place to begin live teaching. Others struggled with noise disturbance from students' homes during the live lessons.

It is important to note that teachers with more than ten years of experience indicated the overall disinterest in online courses altogether, claiming that it is not feasible to experience the fullness of learning via online teaching only. These teachers also inferred that online lessons might succeed for complementary subjects but not for major ones. One teacher commented:

"Live classes are useless for students" (C326, more than ten years of experience).

4.2.2 Open-ended question 2:

How did you cope with these challenges?
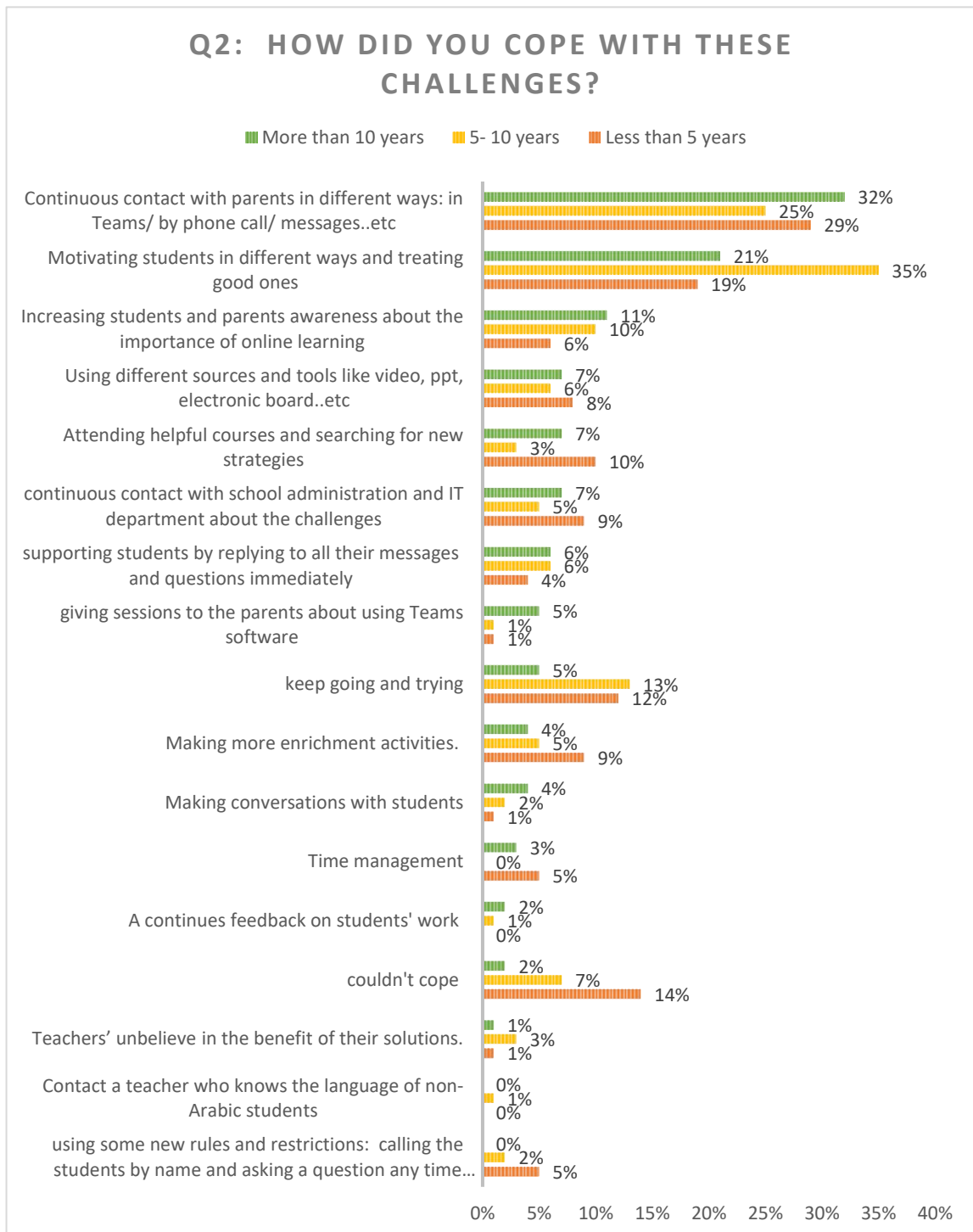
Figure 8. Frequently addressed coping strategies with challenges in online teaching

Figure 8 reflects that problem solving was the most considered option, with the participants strongly affirming that they strive to overcome these challenges in every way possible. One teacher reflected:

"A good teacher always attempts to overcome challenges, and I feel I overcame some of them". (B128, 5-10 years of experience)

The majority of participants selected contact with parents as the first option for bridging the distance between teachers and their students caused by physical barriers. Teachers interact with parents in a variety of ways, including phone calls and text messages in order to check in on their students before and after school hours. Teachers have met with parents for a number of reasons involving their children.

Teachers with less than five years of experience mostly communicated with parents to follow up on their children's homework and tasks. One teacher mentioned:

"I contacted the parents to solve the problem of not doing the homework" (A42, less than five years of experience).

Teachers with 5-10 years of experience mostly communicated with parents to engage them in the learning processes.

"I communicated with parents to involve them in the learning process and rewarded the diligent ones" (B 116, 5-10 years of experience).

Teachers with many years of experience have maintained communication with parents to increase awareness of the importance of online learning and how to support them. For example, one teacher remarked:

"I provided parents with continuous awareness and support in using Teams" (C293, more than ten years of experience).

Shifting from face-to-face teaching to online teaching has been the ultimate challenge for all teachers, and not all teachers have managed to overcome these challenges. Many teachers with less than five years of experience struggled with self-efficacy and questioned the effectiveness of their solutions. For example, some comments as received from three teachers:

"I tried my best, but nothing is better than observing them in face-to-face interactions" (A26, less than five years of experience).

"I wasted a lot of time preparing online lessons and following up with my students" A48 (less than five years of experience).

"I did not cope well; my pressure has increased, which has had an adverse impact on my physical health" (B193, 5-10 years of experience).

4.2.3 Open-ended question 3:

What support did you receive in online teaching during the pandemic period?
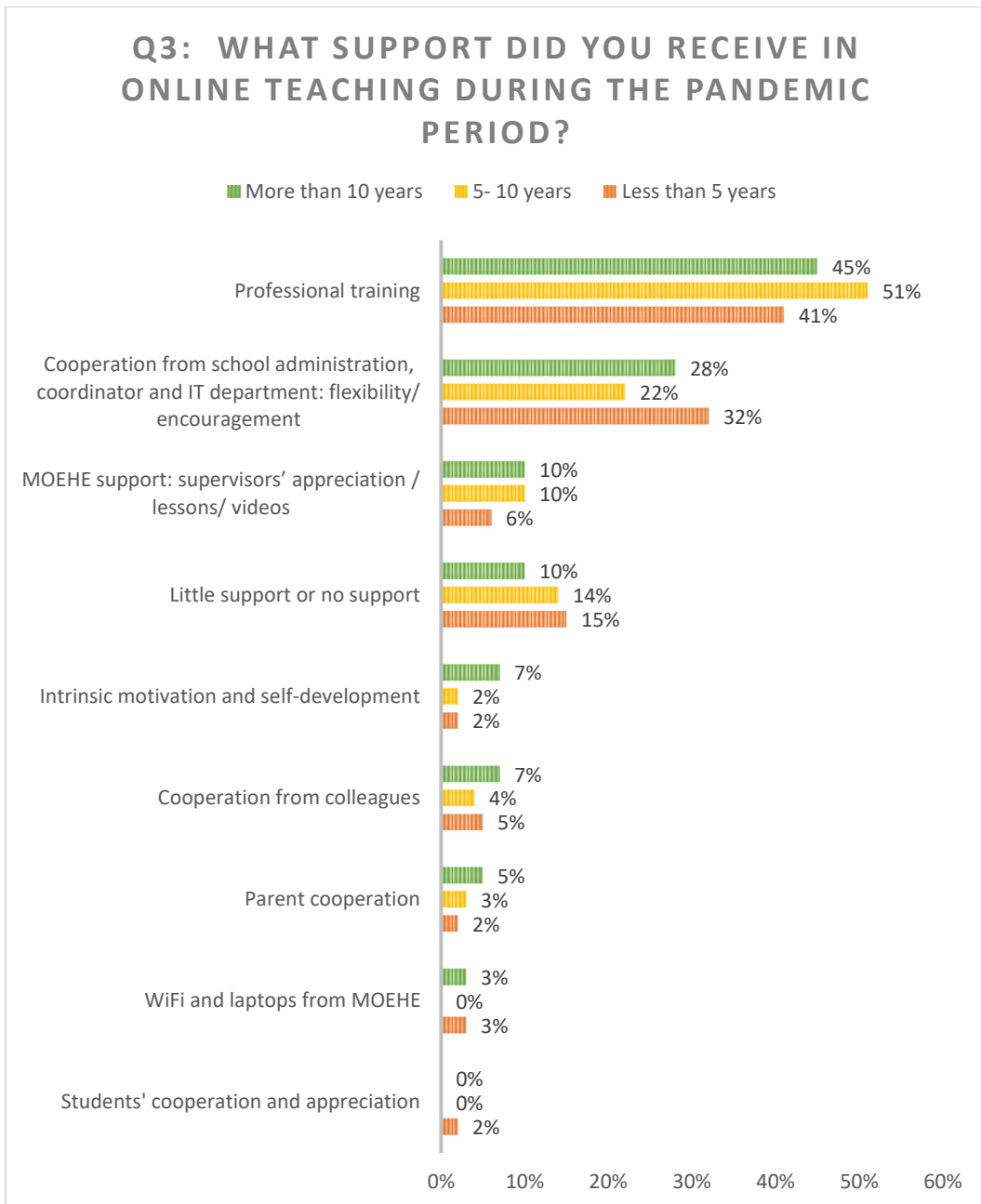
Figure 9. Main support teachers received in online teaching

The educational sector, like many other sectors, has suffered setbacks as a result of the COVID-19 pandemic. However, it is noteworthy that the educational system has proved to be an adaptable and resilient force during these challenging times. The pedagogical approach saw a smooth shift from the traditional classroom environment to an online learning environment. Teachers had to swiftly adapt to the technological

requirements and contemporary interaction methods to facilitate an effective learning process as every household rapidly transformed into a classroom environment. They were required to productively divide their time between teaching students remotely and completing other administrative tasks such as preparing lessons, creating assessments, revising curriculums etc.

From Figure 9, It is clear that the workshops provided to teachers, as well as the cooperation of school faculty members such as administrators, coordinators, and the IT department, proved to be a critical support system in assisting teachers in adapting to the new pedagogical life. The school administrators and coordinators spent time assisting teachers and students to ensure that the system operated smoothly and that parental expectations were met. As one respondent mentioned:

"We received psychological support and continuous motivation by the school administration. Teachers have been motivated through being awarded certificates for good practice, which considerably increased their motivation" (A24, less than five years of experience).

In addition, the IT department has successfully directed staff in maximizing the teaching process by utilizing online resources and platforms. One staff member commented:

"The administration and IT department strived to solve all the problems we face in the shortest possible time" (B180, between 5-10 years of experience).

On the other hand, parent and student cooperation did not provide the same kind of support for teachers during the pandemic. One teacher mentioned:

"We received adequate technical support and very little support from parents" (B111, between 5-10 years of experience).

Working parents are under strain with regards to managing their children's homeschooling, and students are finding it difficult to concentrate on their studies in a home-based setting with potential distractions. Another participant conveyed the view:

"I only received the parents' prayer for my unrivaled patience and concern for the students' learning, so this is sufficient enough for me" (C354, more than ten years of experience).

Along with the above-mentioned encouragement, there was also a sense of peer support and collaboration among teachers, despite the fact that most of them were unprepared for the change that the pandemic had brought about. A staff member put forward the view:

"We supported each other through the sharing of ideas and new strategies to teach online effectively" (A48, less than five years of experience).

Some teachers believed in their pivotal influence on a student's learning life and thus did not solely rely on their department's workshops. They exercised support through self-improvement by attending external seminars to stay updated with up-to-date ideas and strategies. A staff member remarked:

"I supported myself by searching for solutions and attending many workshops to improve my online teaching skills" (C334, more than 10 Years of experience).

4.2.4 Open-ended question 4:

What support do you need to develop your self-efficacy in distance education?

Q4: WHAT SUPPORT DO YOU NEED TO DEVELOP YOUR SELF-EFFICACY IN DISTANCE EDUCATION?

More than 10 years ■ 5- 10 years ■ Less than 5 years

Category	More than 10 years	5-10 years	Less than 5 years
More interactive and practical workshops suitable strategies with online settings	46%	49%	54%
workshops on how to increase parents and students' motivation.	11%	14%	6%
Reduce teachers' workload	9%	9%	9%
No need for support	9%	10%	11%
Technical solutions to overcome problems that hinders online teaching	8%	0%	5%
Professional training on learning styles and student differentiation.	4%	6%	5%
Psychological support	3%	2%	3%
Rise salaries	2%	4%	2%
provide a new high quality learning platform for Doha schools only	2%	5%	5%
providing stronger WiFi for teachers and students	1%	3%	3%
Teachers' lack of interest in online courses.	1%	3%	5%
To be more flexible administration and not to nitpick on every single mistake.	1%	4%	3%
improve the quality of e-learning videos by MOEHE	0%	0%	3%

Figure 10. Main support teachers require in online teaching

The survey findings reveal that over 54% of teachers believe that interactive and practical technological professional development is required in excess to develop self-efficacy in online teaching and overcome challenges. Participants suggest

providing training workshops to coach teachers on how to utilize and practice online teaching techniques effectively (See figure 10). One participant commented:

"I need practical workshops by experts in the field, not only the sharing of ideas" (C284, more than ten years).

Moreover, many of the participants, both novice and experienced teachers, call for professional development in contemporary online teaching methods for a productive learning process in line with the modern era. One participant stated:

"Sometimes, I need technical support to overcome problems that hinder online teaching/learning" (A4, less than five years).

Another participant conveyed:

"I need to learn about tools and the right equipment that will help in completing my tasks easily" (C187, more than ten years)

CHAPTER 5: DISCUSSION AND CONCLUSION

This chapter discusses the data found through surveys concerning the previous studies while also touching upon limitations, recommendations, and suggestions for future research.

5.1 Discussion

This study aimed to investigate primary level teachers' perceptions concerning self-efficacy in online teaching amidst a pandemic setting. Self-efficacy beliefs were disclosed and measured on a scale with 23 close-ended questions and four open-ended questions. The study sought to uncover differences in self-efficacy regarding the following variables: gender, age, and teaching experience.

5.1.1 Results for Research Question One

How do primary teachers within Qatari government schools report their self-efficacy of online teaching in a pandemic context?

Looking closer at Qatar government primary teachers' self-efficacy levels in online teaching, means were calculated for each item. Results indicate that primary school teachers reported higher self-efficacy levels in online education, with mean scores rated between 5.80- 7.39 in the following three domains: student engagement, classroom management, and instructional strategies.

The positive outcome of teachers' self-efficacy observed holds similarities to Horvitz et al. (2015)'s analysis of online professors from a variety of universities. Positive results were also discovered in other studies conducted on face-to-face teachings, such as Voris' (2011) study carried out on special education teachers in Kentucky, Kim and Kim's (2010) study on early childhood teachers' self-efficacy in

South Korea, and Chang, Lin, & Songs' (2001) study on University teachers in Taiwan. However, these studies pose a direct conflict with Sokal, Trudel, and Babb's (2020) study on online teachers' self-efficacy in the COVID-19 pandemic in Canada, Moore-Hayes's (2011) study, Robinia and Anderson's (2010), and Wong's (2003) study.

The highest degree of self-efficacy was found to be associated with the instructional strategies domain among the three primary domains. With a major difference between the two, the lowest degree of self-efficacy was associated with the classroom management domain.

Many research studies on the self-efficacy in online education were undertaken to explore how readily teachers adapt to online learning whilst exploring why teachers carried the highest self-efficacy within the instructional strategies domain. Bandura (1977) indicated two significant factors that played a crucial role in influencing teachers' efficacy in instructional methods. The first factor was vicarious experience, in which teachers observe another teacher. Bandura (1977) implied that the belief in obtaining success in a career is generated by observing successful individuals.

Of the study that involved open-ended questions, teachers indicated that they felt supported by workshops and reported attending external training programs after working hours. This represents a correlation between vicarious experiences and self-efficacy.

The second factor influencing teachers' self-efficacy in instructional strategies is verbal persuasion. Teachers are often persuaded of self-belief in overcoming challenges through verbal encouragement from others. According to Tschannen-Moran et al. (1998), verbal persuasion influences teachers' self-efficacy through the encouragement and support of their abilities and provides strategies for coping with situational challenges that arise. Several teachers who responded to the open-ended

questions mentioned receiving verbal persuasion from their school administrators, supervisors, and colleagues.

Another critical factor that plays into self-efficacy is the English language and Z-Generation. In the present age, English is an international language utilized first and foremost in communication among a diverse population, suggesting there is an increased level of English language speakers and learners in modern times compared to the previous decades (AlHasni, 2017). Furthermore, Generation Z born in 1997, grew up in the digital age and is portrayed as more tech-savvy in comparison to previous generations. In the modern age, technology is easily accessible in various forms to all age groups. These factors combined may have contributed to an effective instructional strategy, explaining why teachers carry higher self-efficacy in this domain.

Results that revealed instructional strategies with the highest mean scores were found in some studies conducted on online teachers (Northcote et al., 2016; Horvitzs et al., 2015) and in other studies conducted on face-to-face teaching (Mehdinezhad, 2012; Kim and Kim, 2010). In contrast to the study of Chang, Lin, & Song (2011), which revealed instructional strategies with the lowest mean scores, AlHasni (2017) found that only experienced teachers scored the highest means in the instructional strategies domain. It is important to note that the inconsistencies found in these studies may be due to the variation in settings and the samples taken.

In comparing classroom management and student management domains, it was found that the student engagement domain corresponded with higher self-efficacy levels in online teaching. A viable explanation for this finding is that teachers may have employed the same pedagogical methods during the online teaching setup, which they had previously used in a traditional classroom setup. These methods may have proved successful in building positive relationships with students and engaging them in

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discussions (Bailey and Card 2009). In the present age, the educational sector gives prominence to student engagement. Unlike traditional methods, teachers must cover the syllabus and create positive relationships with students to gain their confidence. Therefore, teachers with this skill set tend to succeed in devising creative methods for engaging students. Furthermore, the study suggests that teachers became increasingly flexible through online pedagogy and provided feedback to students at a much higher speed through emails, phone calls, and video conferencing sessions.

Furthermore, participants stated that transitioning to online education improved their didactics; they were more flexible with their time, prepared extensively for synchronous sessions, and responded quickly to student feedback.

This study demonstrates that the lowest means scores were found in the classroom management domain. An investigation into why teachers carried higher self-efficacy levels in classroom management could raise the following question: Do teachers view classroom management as a skill that is harder to attain in comparison to engaging students or using instructional strategies? It may be implied that the challenge of maintaining student focus arises from the absence of face-to-face teaching. Students may have already experienced demotivation owing to the sudden shift to online learning, whereby the home had to be transformed into a learning space. This shift within itself had the potential to create a great deal of disruption for students, which is not within the teachers' control. Therefore, it is unfeasible for teachers to manage an online classroom better than they would a conventional classroom.

Findings that reported the classroom management domain with the lowest mean scores have not been found in the earlier observed studies, which found the lowest mean scores in the student engagement domain (AlHasni, 2017; Horvitzs' et al., 2015; Voris, 2011; Kim & Kim, 2010). In comparison, the lowest mean scores in the Northcote et

al. (2016) study was found in technological resources. It is inferred from the Riggs and Enochs (1990) study that teachers vary in their self-efficacy levels regarding areas of improvement. For example, a teacher may harbor a strong sense of management efficacy but display less student engagement efficacy. Therefore, the efficacy belief system is not a global attribute; it is a hierarchy of self-beliefs.

However, low levels of self-efficacy were found in Wong's (2003) study, whereas an intermediate level of self-efficacy was found in Robinia and Anderson's (2010) research and a low to medium level of teaching self-efficacy was found in Sokal, Trudel, and Babb's (2020) study.

5.1.2 Discussion of Results for Question Two

Is there a significant difference in online teaching efficacy in relation to variables: age, gender, years of experience, and number of online teaching experiences?

Primary teachers' self-efficacy beliefs were analyzed to determine significant distinctions between self-efficacy scores and demographic variables. The three efficacy domains were used as dependent variables and the demographic variables as independent variables.

Interestingly, this study's findings demonstrated a statistically significant relationship between self-efficacy and years of teaching experience. Indicating that the more years of experience, the higher the online teaching self-efficacy they perceive. The higher mean scores among experienced teachers are not unforeseen as literature has revealed that experienced teachers are well-versed in content and experts in innovative teaching methods. Thus, they had a considerable amount of time to refine teaching pedagogy (Dinc, 2019). A surplus in years of experience contributes to enhancing social and cognitive competence and self-efficacy in overcoming

challenging situations. Therefore, integrating technology within face-to-face learning before the Covid-19 pandemic has aided teachers in utilizing technology with ease in online teaching settings to effectively meet the needs of students during the pandemic. Furthermore, these results support Tschannen-Moran and Hoy's (2007) argument that experienced teachers have higher self-efficacy than inexperienced teachers as a result of differences in teaching methods. Several researchers have observed a positive relationship between self-efficacy levels and the number of years in teaching experience. It was discovered that more experienced teachers perceived themselves as highly efficient in teaching compared to those with less experience (AlHasni, 2017; Horvitzs et al., 2015; Mehdinezhad, 2012; Chang, Lin, & Song, 2011; Moore-Hayes, 2011; Wolters and Daugherty, 2007). In contrast, Lee and Tsai (2010) found a significantly greater self-efficacy level among less experienced teachers than those carrying more experience. On the other hand, Infurna (2016) and Voris (2011) reported no correlation between TSE and the number of teaching experience years.

In this study, it is evident that there was no marked difference between gender and self-efficacy in the online learning environment. One potential explanation for this result is that, in comparison to previous decades, there is a greater availability and easier access to computers for both men and women (Teo et al., 2008). This finding corresponds with Mehdinezhad's (2012) study on university teachers' self-efficacy in Iran, Wee-Loon's (2011) study on primary science teachers' self-efficacy in Singapore, and Robinia & Anderson's (2010) Michigan study on nurse educators' self-efficacy in online teaching in Michigan.

The above literature varies in terms of which gender portrayed higher self-efficacy levels. Some studies also revealed that female teachers displayed higher self-efficacy than males (Horvitzs et al., 2015; Chang, Lin, & Song, 2011) whereas another

study found that males exhibited higher self-efficacy beliefs than their female counterparts (Lumpe et al., 2012).

This study also illustrates that there is no notable correlation between teachers' age and their levels of self-efficacy in any of the three domains; the three age groups are within the high levels. Many of the studies discussed in the above literature review did not address the dissimilarities in teachers' self-efficacy concerning their age. One study has reported similar findings in Robinia & Anderson's (2010), and another reported a significantly greater self-efficacy among younger teachers than older ones.

5.1.3 Challenges and coping strategies

The researcher used the qualitative component in the current study to gather more data beyond the study results. Towards the end of the TSE survey, teachers were required to respond to four open-ended questions. Responses to the four open-ended questions were examined to understand factors beyond the current self-efficacy level in predicting the future landscape. The participants' responses elicit a detailed understanding of the pandemic changes that teachers were faced with.

The qualitative data has explored difficulties that teachers have encountered in online teaching during the pandemic. Primary level teachers encountered unprecedented challenges in the face of the pandemic with the altered education system. Unmotivated students, uncooperative parents, and technological problems are three of the most significant challenges teachers face in online teaching during the pandemic, according to the qualitative findings. These difficulties may have resulted from the initial shock of having to adjust to a new way of life as a result of the pandemic.

However, it is notable that novice teachers expressed their challenges in other areas a great deal more compared to teachers with extensive experience. Workload,

difficulty in assessing students, a shortage of resources, and a lack of innovative pedagogy are among the challenges that were listed. When addressing these differences, it becomes apparent that teachers with fewer years of experience can be overwhelmed by the stress of completing online teaching assignments, overseeing classes, monitoring student behaviors, and devising new strategies simultaneously. Expert teachers, perhaps as a result of their years of experience, can devote their undivided attention to students' and parents' concerns as they are equipped with a refined skill set that allows them to adapt quickly.

Another qualitative result reveals that teachers with more years of experience tend to be more flexible in challenging situations. They expressed the following views: "A Good teacher always tries to overcome challenges" and "Patience is the key to relief," all of which reflect the influence of their self-efficacy.

In contrast, novice teachers are more inclined to share ideas and discuss their challenges with colleagues to find ways to overcome them and develop their practices. This was evident in some teachers' responses who answered the open-ended questions by voicing: "We supported each other by sharing ideas and new strategies to teach online effectively".

In the present study, teachers varied in their coping strategies with challenges. Nonetheless, they were persistent in maintaining communication with parents, although this posed as one of the most significant challenges. Close analysis shows that the study sample's experienced teachers were optimistic in what would work best, concentrating more on growing students' enthusiasm and parents' understanding of the value of online learning. Conversely, novice teachers were open to a large variety of options in handling their challenges. They vocalized attending more workshops and courses,

completing more activities for their students, and formulating new strategies. However, 14% of novice teachers mentioned that they could not manage those challenges well.

This discussion reveals a connection with Sahertian & Soetjipto's (2011) concept that teachers' beliefs associated with their self-efficacy are reflective of their strengths in teaching alongside their decisions in choosing learning activities in the classroom and how they address challenges. The higher the self-efficacy levels, the more successful the coping attempts in overcoming challenges (Bandura & Adams, 1977). Therefore, some expert teachers expressed their success by vocalizing how they overcame challenges which reflects Allinder's (1994) concept that highly efficacious teachers tackle disruptive situations with the confidence to exert their power over the obstacles.

This study also identified teachers' perceptions of the level of support both needed and received. Based on the qualitative data, it is evident that although workshops were delivered to teachers and the school cooperation played an active role in providing a support system that helped teachers to adapt to online education, it is still unsatisfactory in the present time. One participant revealed, "It is not that much quality," and other teachers considered it as "little support" or "no support." Therefore, the majority of participants suggested providing a practical professional development program by experts who have the skill set to train teachers in maneuvering online teaching techniques in light of the current technological age.

5.2 Research Limitations

It is important to note that some limitations in this study have been recognized and must therefore be taken into account. Firstly, although it was a representative

sample, the sample would be more beneficial if the size was greater. Second, the study findings were self-reported by teachers in light of the current pandemic situation, and perceptions are subject to change in other circumstances over time. The data may have been diverse if it was gathered from individuals with alternating perspectives, such as students or school leaders. Third, the only research tool used to collect data on self-efficacy beliefs was a questionnaire. Fourth, the study was limited in scope to the perspective of primary-level teachers only. Consequently, a comparison between teachers' self-efficacy beliefs in all levels of education, including the middle and secondary levels, may have brought further insight to the study.

5.3 Suggestions for future research

Most participants in this study fell short of teaching experience in an online setting. In a future investigation, it is proposed to conduct a follow-up study ensuing one-two years of online teaching experience to assess self-efficacy patterns of change over time better and evaluate if self-efficacy levels increase or decrease in the process.

To develop a broader view of self-efficacy and its development across all areas, additional research will be required in relation to the field of Arabic. It is also recommended to consider qualitative data collection methods or mixed methods such as interviews to provide an in-depth analysis as to why expert teachers have higher self-efficacy beliefs compared to novice teachers.

Further, due to the limited scope of the study, which provides an insight into the self-efficacy degree of primary-level teachers only, it is advisable to investigate a correlational study in determining the relationship between teachers' self-efficacy beliefs among different levels of education.

Furthermore, exploring more reasons for the impact of teacher self-efficacy such as their personal life background and their health conditions – physical and mental. This can give a more detailed analysis on why some teachers are positively embracing change while others are not able to.

5.4 Implication and Recommendations for future practices

This study provided a broad overview of primary school teachers' self-efficacy levels in Qatari government schools. Therefore, this study's results carry vital benefits for teachers in particular along with the Ministry of Education and Higher Education at large. Based on the reported findings, the study imparts the following suggestions in regard to improving future online teaching practices apropos of teachers, school leaders, and policymakers.

Firstly, teachers must develop an increased awareness of their online teaching self-efficacy, particularly in the lower-reported domains, such as classroom management. Teachers are required to find productive ways to enhance their self-efficacy and confront challenges in online teaching as they will be out of touch with current learning methods unless they practice self-belief. As the study stipulated, individuals always become what they feel they are (Sharma & Bumb, 2020).

Furthermore, as the educational system worldwide shifts toward online teaching, teachers must carry a higher level of self-efficacy in utilizing technology to deliver lessons. Teachers should move away from conventional teaching approaches in favour of a more dynamic approach to online teaching, which involves learning creative and productive techniques that appeal to their students' interests. Klem and Connell (2004) asserted that students are more eager to learn when they feel their

teachers care and pay attention to their interests and needs, especially when their teachers involve them in the decision-making process and equip them with life skills the future. This can be accomplished by thinking outside of the box and presenting an increasingly passionate, friendly, and interactive teaching style rather than a one-way delivery of knowledge.

Secondly, school leadership and administration are required to strengthen their grasp on these matters and provide support based on quality professional training. Additionally, school leaders should consider teachers' challenges and needs, especially during the pandemic, and raise teachers' awareness of the self-efficacy sources available and continue to inspire them with new ideas and resources that provide coping strategies and effective tools in online teaching. The COVID-19 pandemic has brought to light contemporary ways of learning. What needs to be at the forefront for a functional online education system is the dedication of the entire school's operatives to create a school culture that embodies a shared sense of purpose and commitment to providing a high-quality and efficient learning system. Additionally, schools must help build a nurturing environment to promote online learning and increase teacher efficacy by investing in technology and removing barriers that restrict this learning mode.

Moreover, schools must consider delivering professional development programs in classroom technology implementation for teachers, especially those with higher self-efficacy, to enhance confidence and technological skills (Durrant & Green, 2007). According to Evers et al. (2002), those with higher self-efficacy levels exude more confidence and are prepared to participate in such programs. Consequently, well-trained teachers can, in turn, support and coach their peers, and this can bring forth increased levels of motivation and confidence for other teachers in an online environment.

It is also recommended for schools to provide professional development training uniquely designed for new teachers who often exhibit lower self-efficacy levels and should focus on classroom management. Although various reasons contribute to lower self-efficacy, some of the key factors are a lack of technological knowledge and drawbacks when addressing student challenges (Mizell, 2008). Professional training should be inclusive of the appropriate workshops on stress relief and emotional boosters for teachers. In alliance with this, schools should also develop relevant KPIs (Key Performance Indicators) for teachers and other faculty members. Finally, providing positive advocacy to parents, students and teachers simultaneously is essential.

Thirdly, for policymakers, it may be worth noting that it is mandatory to maintain an increased awareness of the importance of developing teachers' self-efficacy and understanding their challenges and needs. Showing support aids teachers in tackling difficulties and enhances self-efficacy levels within the online arena of teaching. It is essential to empower teachers by capitalizing on the necessary technological skills development to utilize online teaching to its full capacity. All the factors mentioned above can be achieved if there is an adequate focus on studying in the same way school teachers receive coaching and support to teach online, particularly in their first attempts.

5.5 Conclusion

Self-efficacy levels in online teaching are a relatively new educational phenomenon. The COVID-19 pandemic has resulted in online education being adopted by schools worldwide, though little research has been conducted on online teaching efficacy in light of the pandemic. This study explored how primary teachers in Qatari governmental schools report their self-efficacy levels in online teaching given the

current situation while investigating the role of significant variables such as age, gender, and years of experience in online teaching efficacy.

Teachers positively identified their self-efficacy beliefs in online teaching in the following three domains: instructional methods, student participation, and classroom management, according to the research findings. The findings also show that the instructional strategies domain observed the highest degree of self-efficacy. The classroom management domain, on the other hand, had the lowest degree of self-efficacy. There was no correlation discovered between self-efficacy and demographic variables including age and gender, according to the findings.

However, it is noteworthy that a higher self-efficacy level was more prominent among teachers carrying greater years of experience than those with much less experience. The findings of this study support research that sheds light in regard to actively increasing online teaching self-efficacy, which can be used as a starting point to study the current practices.

This study is also in tandem with our Emir – His Highness Sheikh Tamim Bin Hamad Al Thani's Qatar National Vision 2030 (Qatar National Vision 2030, 2020), emphasizing the importance of social care & protection as well as the Human Development Index. To ensure that these goals are achieved, implemented, and maintained on a steady and consistent basis, it is imperative that online learning is pursued in the long run as technology is highly advanced in the present age. This study bears the potential to provide insight to educationalists on how to implement effective technology in their online classrooms, while also providing appropriate training to its faculty, adapting to the latest online learning trends for a smooth and effective learning process, and enhancing teacher self-efficacy. Education is one of the country's essential Human Capital Index, and children are at the most risk of any sort of disease or

pandemic. In retrospect, this also impacts the nation's vision, a home to a reasonably healthy population. Conclusively, online learning must become the new standard whereby educationalists feel confident in their self-efficacy levels with regard to adopting the skill set required for it to be delivered effectively.

To conclude, With the new way of life post pandemic and the ever-advancing technology, online teaching approaches will continue to grow in educational institutions. In the amidst of these changes, the main objective of educationalists remains the same; An enriching learning experience and positive outcome for pupils.

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APPENDIX (A): REVIEWERS' NAMES AND AFFILIATIONS

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APPENDIX (B): TEACHER SELF- EFFICACY IN EMERGENCY ONLINE

TEACHING SURVEY

<div dir="rtl">

استبانة الكفاءة الذاتية للمعلمين في التدريس الطارئ عن بعد

الاستبانة التي بين أيديكم تُعد جزءاً من رسالة الماجستير في تخصص "المناهج والتدريس والتقويم" في جامعة قطر وتهدف هذه الاستبانة إلى جمع معلومات متعلقة بتصورات المعلمين حول كفاءتهم الذاتية في التدريس الطارئ عن بعد، ونظرا لأهمية إجابتكم في تحقيق أهداف البحث، نرجو تعاونكم في الإجابة عن أسئلة الاستبانة بكل دقة وموضوعية، شاكرين لكم مقدما حسن تعاونكم ومقدرين جهدكم ووقتكم. علما أن البيانات المجمعة ستبقى سرية ولن تستخدم إلا لأغراض البحث العلمي فقط.

</div>

Demographic data:	البيانات الديموغرافية:
Gender: Male/ Female…	الجنس:......................ذكر/أنثى.............
Age:…	العمر:.
21- 30	- 21- 30
31- 40	- 31- 40
Above 40	- 41- فما فوق
	خبرة التدريس:
Teaching Experience	- اقل من 5 سنوات
Less than 5 years	- 5- 10 سنوات
5-10 years	- أكثر من 10 سنوات
More than 10 years	
Online Teaching Experience:…	خبرة التدريس عن بعد:
- Less than 3 years	- اقل من 3 سنوات
- 3-5 years	- 3- 5 سنوات
- More than 5 years	- أكثر من 5 سنوات

التعليمات: حدد مدى توافق كل عبارة من العبارات التالية مع تصوراتك الشخصية (9= بدرجة كبيرة جدا، 5= بدرجة متوسطة، 1= بدرجة قليلة جدا. أجب عن كل سؤال آخذا بالاعتبار مدى قدرتك على أداء هذه المهام في الوقت الحالي، بالإضافة إلى مدى توفر المصادر والفرص للقيام بها، ثم حدد الاجابة قائلا قبلها: " أستطيع أن....".

Instruction: Please indicate your opinion about each of the questions below by marking any one of the nine responses in the columns, ranging from (1) "None at all" to (9) "A Great Deal" as each represents a degree on the continuum. Please respond to each of the questions by considering the combination of your current ability, resources, and opportunity to do each of the following in your present position. A helpful prefix to each answer is, "I can do….".

Nothing بدرجة قليلة جدا				Some بدرجة متوسطة				A Great Deal بدرجة كبيرة جدا	العبارة Statement
1	2	3	4	5	6	7	8	9	1.كم من الجهد يمكنك بذله في مساعدة طلابك على التفكير النقدي في فصل دراسي عن بعد؟ How much can you do to help your students think critically in an online class?
									2. كم من الجهد يمكنك بذله لضمان اندماج الطلبة في التعليم عن بعد؟ How much can you do to get through to students in an online class?
									3. كم من الجهد يمكنك بذله لضبط السلوك الفوضوي في الحصص عن بعد، مثل: (المشاركات غير المحترمة أو عدم الالتزام بالسياسات العامة للمنشورات أو المشاركات)؟ How much can you do to control disruptive behavior (e.g. disrespectful posting or failure to adhere to outline policies for posting online)
									4. كم من الجهد يمكنك بذله لتحفيز الطلبة الذين يبدون قليلا من الاهتمام بالأعمال المدرسية عن بعد؟ How much can you do to motivate students who show low interest in online work?
									5. إلى أي درجة يمكنك تكوين توقعات واضحة عن سلوك الطلبة في الحصص عن بعد؟ To what extent can you make your expectations clear about student behavior in an online class?
									6. كم من الجهد يمكنك بذله لجعل الطلبة يؤمنون بقدرتهم على الأداء الجيد في الحصص عن بعد؟

										How much can you do to get students to believe that they can do well in an online class?
										7. إلى أي درجة يمكنك الإجابة على أسئلة الطلبة عن بعد؟ How well can you respond to questions from online students?
										8. إلى أي درجة يمكنك وضع نظام روتيني (تسهيل أو متابعة مشاركات الطلبة على سبيل المثال) يضمن قيام الطلبة بالأنشطة عن بعد وبسلاسة؟ How well can you establish routines (e.g. facilitate or moderate student participation) in coursework to keep online activities running smoothly?
										9. كم من الجهد يمكنك بذله لمساعدة الطلبة على تقدير قيمة التعلم عن بعد؟ How much can you do to help students' value of online learning?
										10. كم من الجهد يمكنك بذله لقياس مقدار استيعاب الطلبة لما علمتهم عن بعد؟ How much can you do to gauge student comprehension of what you have taught in an online mode?
										11. كم من الجهد يمكنك بذله في صياغة الأسئلة أو الواجبات التي تتطلب من الطلبة التفكير من خلال ربط الأفكار بالمعرفة والخبرة السابقة؟ How well can you craft questions or assignments that require students to think by relating ideas to previous knowledge and experience?
										12. كم من الجهد يمكنك بذله لتعزيز الإبداع لدى الطلبة في الفصل عن بعد؟ How much can you do to foster individual student creativity in an online course?
										13. كم من الجهد يمكنك بذله لاقناع الطلبة بالالتزام بقوانين تسليم الواجبات في الفصل عن بعد؟ How much can you do to get students to follow the established rules for assignments during an online class?
										14. كم من الجهد يمكنك بذله لتحسين فهم الطلبة ذوي التحصيل المنخفض في الفصل عن بعد؟ How much can you do to improve lower achievers in an online class?
										15. كم من الجهد يمكنك بذله لضبط الطلبة الذين يسيطرون على المناقشات في الفصل عن بعد؟ How much can you do to control students dominating online discussions?
										16. إلى أي درجة يمكنك إنشاء نظام إدارة صفي يتناسب مع كل مجموعة في الفصول عن بعد؟ How well can you organize an online course (e.g. convey expectations; standards; course rules) with each group of students?

								17. كم من الجهد يمكنك بذله لتكييف الدروس عن بعد لتتناسب مع أنماط التعلم المختلفة للطلبة؟ How much can you do to make your online meet learning styles?
								18. كم من الجهد يمكنك بذله لاستخدام أساليب تقييم متنوعة في الفصل عن بعد؟ How much can you do to use a variety of assessment strategies for an online course?
								19. كم من الجهد يمكنك بذله لغرس قيمة مسؤولية التعلم عن بعد عند الطلبة؟ How well can you facilitate student responsibility for online learning?
								20. إلى أي درجة يمكنك تقديم أمثلة وتوضيحات بديلة للطلبة عندما يجدون صعوبة في فهم الموضوع في الفصل عن بعد؟ To what extent can you provide an alternative explanation or example when students in an online class seem to be confused?
								21. ما مدى قدرتك على الرد على الطلاب الجريئين في بيئة التعلم عن بعد؟ How well can you respond to defiant students in an online setting?
								22. ما مدى قدرتك على تسهيل عملية التعلم التعاوني للطلبة عن بعد؟ How well can you facilitate collaborative learning online?
								23. ما مدى قدرتك على توفير تجارب تعليمية جيدة للطلاب How well can you provide positive online learning experiences for students?

24. ما هي التحديات التي واجهتها في التعليم عن بعد خلال فترة الجائحة؟ صف أهم 3 تحديات من فضلك.

What challenges have you encountered in online teaching during the pandemic period?

Please elaborate three most important ones.

25. كيف تعاملت مع تلك التحديات؟

How did you cope with these challenges?

26. ما هو الدعم الذي تلقيته حول التدريس عن بعد خلال فترة الجائحة؟

What support did you receive in online teaching during the pandemic period?

27. ما هو الدعم الذي تحتاجه لتطوير كفاءتك الذاتية في التعليم عن بعد؟

What support do you need to develop your self-efficacy in distance education?

APPENDIX (C): OPEN-ENDED QUESTION 1- FREQUENCY

DISTRIBUTION TABLE

Q1: What challenges have you encountered in online teaching during the pandemic period?

	Themes	Frequency					
		Less than 5 years		5- 10 years		More than 10 years		Total N
1	Lack of student motivation and interaction/ no attendance	38	48%	65	52%	118	47%	221
2	Parents: unsupported with technology/ no cooperation/ doing HW instead of their kids	26	33%	44	35%	103	41%	173
3	Technical difficulties	19	24%	29	23%	48	19%	96
4	Workload and lack of time	16	20%	22	17%	41	16%	79
5	Difficulty in students' assessment	14	18%	19	15%	24	10%	57
6	Lack of students' readiness and the young age students, especially (EY)	3	4%	13	10%	27	11%	43
7	Resource crunch	11	14%	10	8%	8	3%	29
8	Difficult to follow up the learning of students/ Keeping track of their students' progress	8	10%	1	1%	16	6%	25
9	Lack of physical interaction and students contact	10	13%	7	6%	5	2%	22
10	Non-arabic students	0	0%	6	5%	10	4%	16
11	Lack of teachers' readiness	0	0%	2	2%	11	4%	13
12	Lack of creativity in online teaching	8	10%	2	2%	2	2%	12
13	Classroom management/ behavior control	1	1%	1	1%	6	2%	8
14	Disruption due to the surrounding interference	5	6%	1	1%	1	0%	7
15	Difficulty in understanding students' emotions and phycology	1	1%	1	1%	3	1%	5
16	Teachers' lack of interest in online courses.	0	0%	0	0%	3	1%	3
	Total	80	100%	126	100%	251	100%	457

Q2: How did you cope with these challenges?

	Themes	Frequency					
		Less than 5 years		5- 10 years		More than 10 years	Total N
1	Continuous contact with parents in different ways: in Teams/ by phone call/ messages...etc	23	29%	31	25%	78	32%	132
2	Motivating students in different ways and treating good ones	15	19%	43	35%	52	21%	110
3	Increasing students and parents awareness about the importance of online learning	5	6%	12	10%	26	11%	43
4	keep going and trying	9	12%	16	13%	12	5%	37
5	Using different sources and tools like video, ppt, electronic board..etc	6	8%	7	6%	18	7%	31
6	continuous contact with school administration and IT department about the challenges	7	9%	6	5%	17	7%	30
7	Attending helpful courses and searching for new strategies	8	10%	4	3%	17	7%	29
8	supporting students by replying to all their messages and questions immediately	3	4%	7	6%	15	6%	25
9	Making enrichment activities.	7	9%	6	5%	11	4%	24
10	couldn't cope	11	14%	9	7%	4	2%	24
11	giving sessions to the parents about using Teams software	1	1%	1	1%	12	5%	14
12	Making conversations with Ss	1	1%	2	2%	9	4%	12
13	Time management	4	5%	0	0%	7	3%	11
14	Teachers' unbelieve in the benefit of their solutions.	1	1%	4	3%	3	1%	8
15	using some new rules and restrictions: calling the students by name and asking a question any time during the session) and it is counted in participation	4	5%	3	2%	0	0%	7
16	A continues feedback on students' work	0	0%	1	1%	4	2%	5
17	Contact a teacher who knows the language of non-Arabic students	0	0%	1	1%	1	0%	2
	Total	78	100 %	123	100 %	245	100 %	446

APPENDIX (E): OPEN-ENDED QUESTION 3- FREQUENCY

DISTRIBUTION TABLE

Q3: What support did you receive in online teaching during the pandemic

period?

	Themes	Frequency						
		Less than 5 years		5- 10 years		More than 10 years		Tot al N
1	Workshops	27	41%	57	51%	102	45%	186
2	Cooperation from school administration, coordinator and IT department: flexibility/ encouragement	21	32%	25	22%	64	28%	110
3	Little support or no support	10	15%	16	14%	23	10%	49
4	MOEHE support: supervisors' appreciation / lessons/ videos	4	6%	11	10%	23	10%	38
5	Cooperation from colleagues	3	5%	5	4%	15	7%	23
6	Intrinsic motivation and self-development	1	2%	2	2%	16	7%	19
7	Parent cooperation	1	2%	3	3%	12	5%	16
8	WiFi and laptops	2	3%	0	0%	6	3%	8
9	Students' cooperation and appreciation	1	2%	0	0%	0	0%	1
	Total	66	100 %	11 2	100 %	227	100 %	404

APPENDIX (F): OPEN-ENDED QUESTION 4- FREQUENCY

DISTRIBUTION TABLE

Q4: What support do you need to develop your self-efficacy in distance

education?

	Themes	Frequency						
		Less than 5 years		5- 10 years		More than 10 years		Total N
1	More interactive and practical technological workshops suitable strategies with online settings to improve online teaching skills	35	54%	51	49%	102	46%	188
2	workshops on how to parents and students' motivation.	4	6%	15	14%	25	11%	44
3	No need for support	7	11%	10	10%	19	9%	36
4	Reduce teachers' workload	6	9%	9	9%	19	9%	34
5	Technical solutions to overcome problems that hinders online teaching	3	5%	0	0%	18	8%	21
6	workshops on how to deal with different learning styles and student differentiation.	3	5%	6	6%	9	4%	18
7	provide a new learning platform with mor high quality features for Doha schools only	3	5%	5	5%	5	2%	13
8	Psychological support	2	3%	2	2%	7	3%	11
9	To be more flexible administration and not to nitpick on every single mistake.	2	3%	4	4%	3	1%	9
10	Rise salaries	1	2%	4	4%	4	2%	9
11	Teachers' lack of interest in online courses.	3	5%	3	3%	2	1%	8
12	providing stronger WiFi for teachers and students	2	3%	3	3%	2	1%	7
13	improve the quality of e-learning videos by MOEHE	2	3%	0	0%	0	0%	2
	Total	65	100 %	10 5	100 %	222	100 %	392