Studies in Learning and Teaching (SiLeT)
Homepage: https://scie-journal.com/index.php/SiLeT
Email: silet@scie-journal.com

p-ISSN: 2722-399X; e-ISSN: 2722-1857
SiLeT, Vol. 7, No. 2, August 2026
Page 355-368

Factors Influencing Teachers' Self-Efficacy in Virtual Classrooms

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Article Info

Article history:

Received December 28, 2024
Revised March 29, 2025
Accepted August 2, 2025
Available Online August 31, 2025

Keywords:

External and internal factors;
Online pedagogy;
Online teaching;
Self-efficacy;

ABSTRACT

The sudden transition to online teaching due to the Covid-19 pandemic has compelled teachers to use a new mode of teaching, which is online teaching, whether or not they are competent users of online tools. Therefore, this study aims to explore Saudi female EFL teachers' perceptions of factors that might influence their self-efficacy in online teaching. Drawing on the self-efficacy theoretical framework, the study measured efficacy beliefs through external and internal barriers to technology integration. Following a quantitative research design, the study utilised a questionnaire to investigate teachers' perceptions of external and internal factors influencing their self-efficacy in online teaching. The questionnaire was administered and completed by 60 female Saudi teachers. The results indicated that internal barriers, such as knowledge, skills, beliefs and attitudes, affect teachers' SE more negatively than external ones, such as time, technical support and PDs. In addition, it has been found that novice teachers perceived online teaching more positively than experienced ones. However, the study revealed that both experienced and novice teachers required support and assistance, particularly in the online pedagogy knowledge base. The study calls for reform in teacher preparation programmes and calls for the need to provide a pedagogically oriented online curriculum.

https://doi.org/10.46627/silet

INTRODUCTION

The transitional phase of face-to-face to online teaching stimulates abundant research about different aspects of teaching. Many teachers have experienced teaching in face-to-face classrooms, while only a smaller number of them have had an experience with online teaching (Liu et al., 2020). After the pandemic, all teachers were pushed to teach online and utilize online tools. In the course of this process, teachers have encountered many technological and pedagogical concerns that could have an influence on their self-efficacy beliefs. Therefore, the shift to virtual learning has provided a context for examining teacher self-efficacy in this new mode of teaching.

Self-efficacy (SE) is defined as one's beliefs about her/his capabilities to exercise control over events and to reach designated levels of performance (Bandura, 1994). Such beliefs are deemed significant because they produce diverse effects on one's life. Bandura (2000) states that people with a strong sense of SE make an effort and persist to achieve the desired outcomes. Conversely, people with a weak sense of SE are less likely to persist in similar situations. The absence of face-to-face interaction and the inadequate familiarity with online pedagogy could have undermined teachers' SE (Peechapol et al., 2018). A strong sense of efficacy can help teachers in many ways. For example, teachers having an efficacious outlook view tasks as challenges to be mastered, not threats to be avoided (Bandura, 2000).

Moreover, they set goals for themselves and maintain a strong commitment to them (Bandura, 2000). They believe that failure can be due to insufficient effort or lack of knowledge, rather than dwell on their personal deficiencies. Hence, in order to provide high-quality teaching and obtain successful students' outcomes, which is at the heart of every educational system (Corry & Stella, 2018), teacher SE should be investigated. Teacher SE has significant implications, and an examination of it in the virtual learning environment is thoroughly justified. The aim of this research study is to investigate EFL teachers' perceptions of factors influencing their SE in online teaching.

While there is a plethora of research concerning SE, there is a scarcity of research that examines teacher SE in online teaching (Peechapol et al., 2018). Therefore, this study seeks to answer the following research questions:

1. What are the external and internal factors influencing teacher SE in virtual classrooms?
2. How can teachers' knowledge and experience influence their SE in virtual classrooms?
3. In what way can teachers' pre-pandemic online teaching experiences influence their SE in virtual classrooms?

This research study is important for the following reasons:

1. Talking about the different nature of the online teaching mode, it is paramount that teacher SE is investigated and researched for mitigating factors that might undermine it.
2. When teacher SE is promoted, this influences their well-being and the quality of teaching teachers provide.
3. To the best of the researcher's knowledge, few studies have investigated teacher SE in online teaching in a Saudi context. Consequently, the study will enrich the literature by highlighting factors influencing teacher self-efficacy. It is also hoped that the results of the current study stimulate further research to detect other factors that either promote or lower teacher SE in virtual classrooms.

RESEARCH METHOD

Research Design

This study investigates EFL university teachers' perceptions of the factors influencing their SE in online teaching. To achieve this, a quantitative method centred on factors influencing teacher SE was adopted to explain different views about the research problem (Cohen et al., 2017).

Context

The study was conducted with EFL university teachers who teach English to preparatory-year students at an English language institute at a Saudi university in Jeddah. The institute conducts a placement exam at the beginning of every year to set students at four different levels, level one being the lowest and four as the highest. Students should complete the four levels in order to pass the English subject in their preparatory year. The Blackboard platform was utilised partially before the pandemic for some homework duties. However, since the onset of the pandemic, Blackboard has become the primary medium where teaching is carried out. The institute has different tracks where teachers teach different books.

Sampling and Participants

The population of the study was EFL university teachers working at the ELI in Jeddah, Saudi Arabia. The reason behind selecting this population is twofold. First, the researcher, as a student, has had experience with both ways of classes, traditional and virtual. Some teachers faced some difficulties and challenges when they shifted their teaching. Such atmosphere may ultimately alter their SE in virtual classrooms. This situation has urged the researcher, as an insider researcher, to explore in more depth the challenges and obstacles that teachers encounter when teaching online. An insider researcher is one who belongs to the group under study (Unluer, 2012). Second, being a member of the university staff has facilitated access to university teachers more than access to other schoolteachers.

Based on the aims of the study, the researcher used a convenience sampling technique for the questionnaire (Crano et al., 2014). 60 female Saudi teachers answered the questionnaire.

Data Collection and Procedure

Questionnaire: Self-Efficacy Measurement

Two theories have provided insights into how SE is operationalized. The first is Rotter's (1966) locus of control theory (LOC) that has two main dimensions: internal and external factors. Teachers with internal belief in their capabilities are strong agents that can affect students' learning regardless of what external factors might do. These teachers believe that they can conquer students' social environment, family background, school resources, and all other external conditions. The second theory is Bandura's (1977) social cognitive theory. He thinks that behavior can influence and is influenced by personal factors like thoughts and cognition and environmental factors like culture. This is what he called triadic reciprocal determinism, which means that there is a reciprocal relationship between the person, environment, and behavior. In this way, teachers' perceptions of teaching effectiveness, or SE, are not static but are rather influenced by prior experience, students' outcomes, and contextual factors. These two theories help us understand how teachers' SE might be measured.

RAND Corporation, a research-oriented organization, in their endeavor to measure SE, based their measurement on LOC theory and identified two factors. The first is personal teaching efficacy (PTE), and the second is general teaching efficacy (GTE). "When it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his or her home environment" is the item representing the GTE factor, whereas "If I really try hard, I can get through to even the most difficult or unmotivated students" represents PTE. The difference between them is in the control of reinforcement. The crucial determinant of students' performance is the environment, not the teacher in GTE, whereas PTE favors the teacher's power to overcome external barriers and determine students' outcomes.

Several studies based their measurement on RAND studies (Gibson & Dembo, 1984; Ashton & Webb, 1986). This two-item scale has been utilized in subsequent decades of research about teacher efficacy (Dellinger et al., 2008). In later studies, Bandura's theory has also informed TE measurement (Gibson & Dembo, 1984; Ashton & Webb, 1986). The Teacher Efficacy Scale (TES) developed by Gibson and Dembo (1984) was the most frequently used in studies measuring teacher efficacy. However, theoretical and psychometric issues appeared to invalidate the findings of this instrument. Consequently, some researchers adapted it (Deemer, 2004), and others created their own measures of TSE (Tschannen-Moran & Woolfolk Hoy, 2001).

The researcher of this study attempted to utilize concepts from both theories. In order to do this, I had to search for external and internal barriers to technology integration to design the questionnaire. Herein, the barriers are considered analogous to measurements used in both theories, Bandura's and Rotter's, since they account for personal and environmental aspects of technology use.

Validity and Reliability

To check the validity of the questionnaire, it was sent to a language expert for clarity. It was also sent to a professor who has a robust experience in designing the questionnaire items. Based on their feedback, some items were modified.

The questionnaire was then piloted with 11 teachers, and Chronbach's alpha coefficient was processed to establish the internal consistency of the questionnaire items. Based on the results, some items were removed as they showed weak reliability. The final Cronbach's alpha was 0.85, as shown below.

Table 1. Reliability statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.854	.859	25

The questionnaire was disseminated electronically to 60 female teachers working at the ELI (via emails and reminders). It consisted of two parts: external and internal barriers to technology use. The external barriers include time, technical support, and professional development and training. The internal barriers include knowledge and skills, beliefs, and attitudes. All items followed a five-point Likert-scale design ranging from strongly agree (5) to strongly disagree (1).

Ethical Considerations

The ethics approval form was obtained from the ELI prior to collecting data. All participants joined the study voluntarily and were assured confidentiality of the data. They were informed that they could withdraw at any time, and they were assured that no personal information might be disclosed.

RESULTS AND DISCUSSION

Demographic Information

Descriptive statistics were used to analyze demographics of the participants' degree, years of experience, and pre-pandemic online teaching experience. Results were as follows:

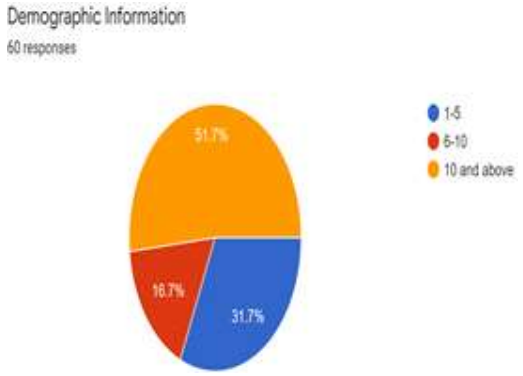

Figure 1. Teachers' overall years of teaching experience

All respondents were Saudi female teachers, with 51.7% of them having more than 10 years of teaching experience. 31.7% have 1-5 years of experience; only 16.7% represent those who have from six to ten years. Regarding the online teaching experience, 63.3% of the teachers have taught online before, with the majority (50%) having five or fewer years of experience, while only 10% have more than five years of online teaching experience. A considerable number of teachers (almost 39%) had no experience in online teaching before the pandemic. Teachers had different degrees, with bachelor's being the fewest by 8.3%, whereas doctorate and master's holders were 28.3% and 63.3%, respectively.

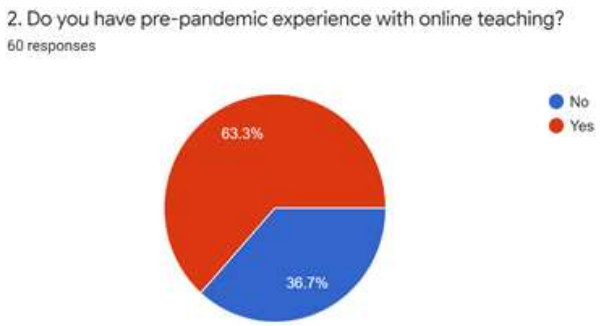

Figure 2. Teachers' pre-pandemic online teaching experience

https://doi.org/10.46627/silet.v7i2.553

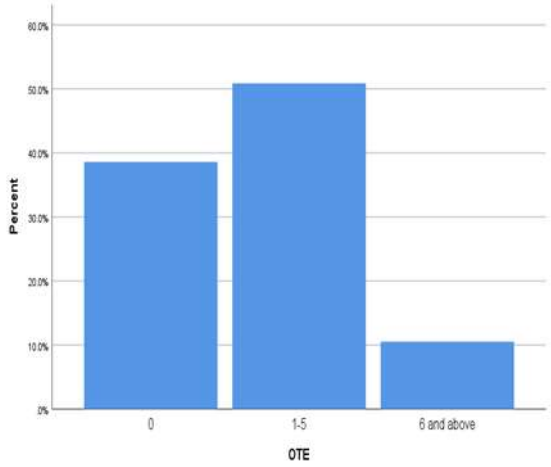

Figure 3. Groups of teachers with regards to pre-pandemic online teaching experience

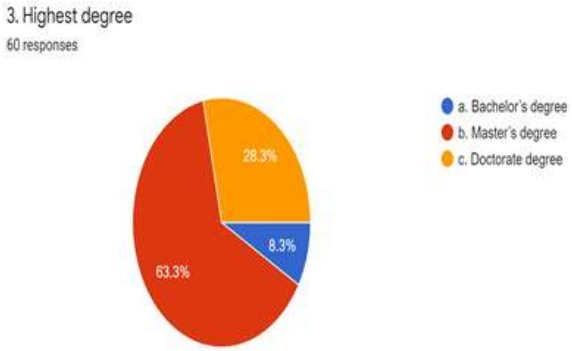

Figure 4. Teachers' highest degree

What Are the External and Internal Factors Influencing Teacher SE in Virtual Classrooms?
Accounting for both measurement strategies adopted in Bandura's SE theory and Rotter's LOC theory, the researcher asked participants to rate external and internal factors influencing online teaching SE in virtual classrooms. External factors include time, technical support, professional development, and training, whereas internal factors include knowledge and skills, beliefs, and attitudes.

Table 2. External and internal factors

External Factors	1.Time
	2.Professional Development
	3.Technical Support
Internal Factors	1.Knowledge and Skills
	2.Beliefs and Attitudes

Participants were asked to rate items from 1 (strongly disagree) to 5 (strongly disagree). Results were computed for normality, and as they were normally distributed, a one-sample t-test was performed to identify whether the mean exceeded 2.5. This value as it represented the midpoint of the score range from 1 to 5 (see table 3 below).

Table 3. Five-point likert scale weighted means

Answer	Weight	Weighted Means
Strongly Disagree	1	1 to < 1.8
Disagree	2	1.8 to < 2.60
Neutral	3	2.60 to < 3.40
Agree	4	3.40 to < 4.20
Strongly Agree	5	4.20 to 5

Table 4. Difference between the external and internal factors

	N	Mean	Sig. (2-tailed)	95% Confidence Interval of the Difference	
				Lower	Upper
External Factors	57	3.7145	.000	1.1003	1.3287
Internal Factors	57	3.3308	.000	.7004	.9612

Test Value = 2.5

From the table above, it can be concluded that the means for both groups are statistically significant with a p-value of .000 (Sig. 2-tailed). A 95% confidence interval for the mean of EF is (1.1003, 1.3287).

A one-sample t-test was used to make an initial interpretation of the data. According to the five-point Likert scale, the weighted mean for responses is 2.5 (see table 2). Participants had a total score mean of 3.7 on a five-point scale and a mean of 3.3 for external and internal factors, respectively. Such means indicated that most participants answered with either "agree" or "strongly agree" to items in the questionnaire. Therefore, results demonstrated a high level of online teaching efficacy overall. Looking closely at both factors, teachers' SE in online teaching was more influenced positively by external factors rather than internal ones.

Table 5. Differences between the significance of variables

	Mean	Std. Deviation	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Time	3.3947	.77192	.000	.89474	.6899	1.0996
Professional Development	3.5848	.48909	.000	1.08480	.9550	1.2146
Technical Support	4.1871	.57396	.000	1.68713	1.5348	1.8394
Knowledge and Skills	3.4912	.61999	.000	.99123	.8267	1.1557
Beliefs and Attitudes	3.2417	.60681	.000	.74172	.5807	.9027

Table 5 presents the means for each item. Technical support has the highest mean (4.18), where beliefs and attitudes have the lowest (3.24). The highest SD was reported in time, by (0.77) away from the mean. This is followed by the internal factors (knowledge and skills and beliefs and attitudes) of 0.61 and 0.60, respectively. This indicates that the highest self-efficacy beliefs were related to technical support.

As shown in table 3, the mean difference for technical support is 1.68, with a 95% confidence interval stretching from a lower bound of 1.53 to an upper bound of 1.83. The least mean difference displayed in the table belongs to beliefs and attitudes, with a confidence interval of 0.58 to 0.90.

How Can Teachers' Knowledge and Experience Influence Their SE in Virtual Classrooms?

In order to find whether there are any statistically significant differences between the means of novice and experienced teachers and teacher SE in online learning, an independent t-test has been performed.

Table 6. Teachers' overall years of experience

	Years of Experience	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
Time	1-5	19	3.2105	.78733	.18063
	6 and above	38	3.4868	.75772	.12292
	1-5	19	3.5702	.59658	.13687

	Years of Experience	N	Mean	Std. Deviation	Std. Error Mean
Professional Development	6 and above	38	3.5921	.43444	.07047
Technical Support	1-5	19	4.0702	.56195	.12892
	6 and above	38	4.2456	.57831	.09381
Knowledge and Skills	1-5	19	3.5368	.69937	.16045
	6 and above	38	3.4684	.58499	.09490
Beliefs and Attitudes	1-5	19	3.1404	.63163	.14491
	6 and above	38	3.2924	.59607	.09670

As shown in table 4, there are 19 teachers who have less than 6 years of overall teaching experience, whereas the majority (38) have more than 5 years of teaching experience. Overall, there were no significant differences between the means of both groups. This indicated that novice and experienced teachers had almost similar perspectives about the factors influencing their SE in virtual classrooms.

How Can Teachers' Pre-Pandemic Online Teaching Experience Influence Their SE in Virtual Classrooms?

Regarding teachers' online teaching experience, there are three groups. Teachers with no pre-pandemic online teaching experience, teachers with less than 6 years of experience, and teachers who have more than 5 years of online teaching experience. In order to decide whether pre-pandemic online teaching experience has affected teachers' SE, a one-way ANOVA was performed to compare the effect of online experience on SE across the three groups. Results are as follows.

Table 7. Differences between teachers' pre-pandemic OT experience

	Years of Experience	N	Mean
Time	0	22	3.4545
	1-5	29	3.2586
	6 and above	6	3.8333
	Total	57	3.3947
Professional Development	0	22	3.6515
	1-5	29	3.5345
	6 and above	6	3.5833
	Total	57	3.5848
Technical Support	0	22	4.0606
	1-5	29	4.2414
	6 and above	6	4.3889
	Total	57	4.1871
Knowledge and Skills	0	22	3.7636
	1-5	29	3.3517
	6 and above	6	3.1667
	Total	57	3.4912
Beliefs and Attitudes	0	22	3.1414
	1-5	29	3.2375
	6 and above	6	3.6296
	Total	57	3.2417

Most teachers in the study have pre-pandemic online teaching experience, with a total of 35 teachers, of whom 29 have less than five years and only six have more than five years of experience. Teachers who started online teaching during the pandemic were (22). Results indicate that teachers with more than five years of experience in online teaching have higher SE compared to the other groups, with a mean of 3.8. Similarly, most experienced teachers in online teaching

have high SE in beliefs and attitude (m=3.6). Conversely, teachers with no pre-pandemic online teaching experience have higher SE in their knowledge and skills (m=3.7).

Table 8. Differences between TSE following the OT experience

		Sum of Squares	df	Mean Square	F	Sig.
Time	Between Groups	1.770	2	.885	1.513	.230
	Within Groups	31.598	54	.585		
	Total	33.368	56			
Professional Development	Between Groups	.171	2	.086	.350	.706
	Within Groups	13.224	54	.245		
	Total	13.396	56			
Technical Support	Between Groups	.682	2	.341	1.036	.362
	Within Groups	17.767	54	.329		
	Total	18.448	56			
Knowledge and Skills	Between Groups	2.829	2	1.414	4.085	.022
	Within Groups	18.697	54	.346		
	Total	21.526	56			
Beliefs and Attitudes	Between Groups	1.125	2	.562	1.558	.220
	Within Groups	19.496	54	.361		
	Total	20.620	56			

The one-way ANOVA revealed that there was a statistically significant difference in teacher SE between at least two groups (F (2,54). This is evident in time (F=1.513, p=0.230), knowledge and skills (F=4.085, p=0.022), and beliefs and attitudes (F=1.558, p=0.220). The test demonstrates that the three groups converge in SE concerning all factors (external and internal). This indicates that teachers with different pre-pandemic online teaching experiences have almost similar SE with regard to external and internal factors influencing online teaching. However, the test also shows that there is a significant difference between the groups in the internal factor (knowledge and skills). The Sig. value is .022, which is less than .05, indicating a difference somewhere among the mean scores for the three groups. However, the test does not show which specific groups have differences. Having received a statistically significant difference, the researcher requested the results of the post-hoc test to determine which specific means are significantly different.

Table 9. Multiple Comparisons

Tukey HSD

Dependent Variable	(I) OTE	(J) OTE	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Time	0	1-5	.19592	.21628	.639	-.3253	.7171
		6 and above	-.37879	.35231	.533	-1.2279	.4703
	1-5	0	-.19592	.21628	.639	-.7171	.3253
		6 and above	-.57471	.34308	.224	-1.4015	.2521
	6 and above	0	.37879	.35231	.533	-.4703	1.2279
		1-5	.57471	.34308	.224	-.2521	1.4015
Professional Development	0	1-5	.11703	.13992	.682	-.2202	.4542
		6 and above	.06818	.22792	.952	-.4811	.6175
	1-5	0	-.11703	.13992	.682	-.4542	.2202
		6 and above	-.04885	.22195	.974	-.5837	.4860
	6 and above	0	-.06818	.22792	.952	-.6175	.4811
		1-5	.04885	.22195	.974	-.4860	.5837
Technical Support	0	1-5	-.18077	.16217	.509	-.5716	.2101
		6 and above	-.32828	.26418	.434	-.9649	.3084
	1-5	0	.18077	.16217	.509	-.2101	.5716

Tukey HSD							
Dependent Variable	(I) OTE	(J) OTE	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Knowledge and Skills	6 and above	6 and above	-.14751	.25726	.835	-.7675	.4725
		0	.32828	.26418	.434	-.3084	.9649
		1-5	.14751	.25726	.835	-.4725	.7675
	0	1-5	.41191*	.16636	.043	.0110	.8128
		6 and above	.59697	.27100	.080	-.0561	1.2501
	1-5	0	-.41191*	.16636	.043	-.8128	-.0110
		6 and above	.18506	.26390	.764	-.4509	.8211
	6 and above	0	-.59697	.27100	.080	-1.2501	.0561
		1-5	-.18506	.26390	.764	-.8211	.4509
Beliefs and Attitudes	0	1-5	-.09613	.16988	.839	-.5055	.3133
		6 and above	-.48822	.27673	.191	-1.1551	.1787
	1-5	0	.09613	.16988	.839	-.3133	.5055
		6 and above	-.39208	.26948	.321	-1.0415	.2574
	6 and above	0	.48822	.27673	.191	-.1787	1.1551
		1-5	.39208	.26948	.321	-.2574	1.0415

*. The mean difference is significant at the 0.05 level.

Tukey's HSD Test for multiple comparisons was used to determine the nature of the differences between the groups. This analysis revealed that the mean value of scores was significantly different between teachers who have zero experience and those who have less than 6 years of pre-pandemic online teaching experience in terms of knowledge and skills ($p = 0.043$, 95% C.I. = [-.8128, -.0110]). However, experienced teachers had no differences with the other groups of teachers (zero-experienced and from teachers who had 1-5 experience) with respect to knowledge and skills ($p=0.080$, $p=0.764$), respectively.

Discussion

Overall, the study found that teachers have a moderately high SE in virtual classes, as per quantitative results demonstrated. As mentioned by Dexter with Anderson (2002) and Ertmer (1999), second-order/internal barriers are more powerful in their negative influence on online teaching. The study indicated that among internal factors, specifically teachers do not have positive beliefs and attitudes towards online teaching. Teachers believe that the absence of the physical atmosphere particularly constituted a challenge in virtual classrooms. When compared to positive descriptions and replies used to describe online classes, negative adjectives prevailed. Teachers' verbalisation reflected negative attitudes towards online teaching. Most teachers believed that online teaching could not yield better achievement results, as they had negative attitudes towards it. Non-verbal cues inherent in online teaching and lack of body language formed a major obstacle in virtual classrooms (Lin & Zheng, 2015). Consistent findings were reported by teachers in this study, which corroborated that feelings of frustration, disempowerment and vulnerability were due to the absence of a physical atmosphere where teachers could project their presence. The study highlights reasons behind the significance of the physical atmosphere, which has many benefits from teachers' viewpoints. First, students' interaction and participation were diminished in virtual classes due to their being in an uncontrolled environment, a merit found in traditional classrooms. Due to the loss of physical contact, most teachers expressed uncertainty, hesitation and confusion about students' status in an online class. This contradicts features of high-ecfficacious teachers who think they are able to make classroom environments conducive to learning regardless of external factors impeding the learning process (Bandura, 1994; Klassen & Tze, 2014).

This study showed a strong association between one external factor (absence of physical atmosphere) and internal ones (beliefs and attitudes). Despite the fact that beliefs and attitudes are more intricate and hidden than they need to be, they need to be challenged in order to be apparent (Ertmer, 1999). In this study, it was obvious that teachers' pedagogical beliefs have an impact on SE in online teaching. Almost all experienced teachers were not comfortable with the inability to see their students and reckoned that they could hardly teach well in virtual classes. Their pedagogical beliefs that teaching should be conducted inside a physical classroom led them to the belief that they could not be teaching effectively in a virtual classroom. Novice teachers, on the other hand, thought that online teaching could be a successful medium if they were more prepared to integrate technology. Such conflicting views might not necessarily indicate that novice teachers had high SE in virtual classrooms because they indicated being unprepared for it. Therefore, experienced and novice teachers' pedagogical beliefs influenced their views about integrating technology, showing that experienced teachers suffered not only from external but also strong internal barriers, whereas novice teachers suffered more from external barriers rather than internal ones.

Although teachers demonstrated a moderately high SE in all variables, teachers perceived technical support as the least problematic issue in online teaching. Because it alleviates technostress, technical support provided to teachers predicts their SE (Kundu & Bej, 2020). This indicates that since teachers do not complain about technical support, they have a high sense of SE in online teaching. However, teachers assigned relative weight to the actual support provided based on their beliefs about how technology should be used (Vongkulluksn et al., 2018). This might indicate that if some teachers used technology to support traditional teaching activities, they may not need much of the technical support and had no clear opinion about it.

Following beliefs and attitudes, time was rated as being a factor affecting SE negatively. Teachers interviewed had different viewpoints about whether or not technology was time-consuming. Time in virtual classes is a complicated issue that involves teachers' pedagogical beliefs and technological competence. For example, teachers who believe in teacher-centred practices perceive virtual classes as not time-consuming. They do not focus on giving pair or group work, and they do not interact enough with their students. As these practices consume time, they abandon them altogether as a compromise. This is in line with Ertmer's (2005) study that when a new pedagogy confronts a teacher's fundamental beliefs, she finds it riskier to try anything new. Teacher-centredness has been associated with low SE in online teaching as opposed to student-centredness, which is linked to high levels of SE (Becker & Riel, 1999). This does not indicate that teachers who utilise instructional technology to serve constructivist beliefs view time as a problem in virtual classes. Novice teachers who have technological competence believed that online teaching saves time. They hold constructivist beliefs (student-centredness) to utilise instructional technology. Highly efficacious teachers encourage cooperation between students and are willing to experiment with technology (Moore-Hayes, 2011). Other teachers believe that technology is time-consuming due to connection issues. In this study, teachers experience burnout not because of designing learning activities suitable to online pedagogy, but because of the way they use technology to support traditional teaching activities. Ultimately, teachers have low SE, as they perceive time as a constraint in virtual classes. The study found that teachers' perceptions of external factors mainly depend on how they utilise instructional technology. It was prominent that teachers who use technology to support traditional teaching activities suffer from external factors and thus have low SE, while teachers who use it to transform teaching to be compatible with the online environment view constraints as challenges, which demonstrated high SE.

Furthermore, knowledge and skills have received the least scores, showing low SE in virtual classes. Most teachers perceive themselves as lacking the requisite knowledge and skills to teach effectively in an online environment. When asking the teachers about the PDs and the training they received, apparently they indicated a lack of pedagogically oriented programmes. Since technology is neither neutral nor unbiased, it has its own propensities, making online teaching

and traditional teaching two disparate environments. Viewing online teaching as having interrelationships between such knowledge bases stresses the significance of pedagogically oriented programmes in raising teacher SE. Some teachers have a negative attitude towards virtual classes due to a lack of knowledge of how to integrate pedagogy with technology. Some teachers admitted a lack of pedagogical, not technological, competence to teach effectively. The study found that teachers who have low SE might not always express that clearly, but it has to be meticulously investigated. Because internal barriers are complex to detect, it serves the purpose that external barriers should be eliminated because this has the power to change internal barriers (knowledge and skills, beliefs and attitudes). As Hur et al. (2016) mentioned, PDs can change beliefs and attitudes so that when teachers become equipped with the knowledge and skills to teach virtual classes effectively, they will have positive beliefs about it; ultimately, their long-held beliefs about technology are changed. In order for PDs to be influential, the study emphasises the need that they should be focused not only on technological aspects but also on pedagogical ones.

There are other factors that teachers mentioned influencing their SE in online teaching, including grade distribution and family issues. While family issues have been mentioned as an external barrier lowering teacher SE in Hamutoğlu and Basarmak (2020), grade distribution has not been highlighted as a barrier in previous studies. However, grade distribution has been linked to teacher satisfaction with virtual learning. The current study considers satisfaction, a psychological state, as influencing SE in virtual classes. Fixed grade distribution that does not align with the online environment has been reported by teachers to cause them disappointment in virtual classes. Teachers believe that they have no authority in online classes since they cannot force their students to participate. Teachers in this sense do not mainly require authority per se; they rather want to rely on negative sanctions to get students to work, which is a sign of teacher low SE (Holzberger et al., 2013). They believed that students cannot be interactive in an online environment unless teachers are able to deduct marks. Along with the loss of physical atmosphere, teachers cannot get students to work, which causes them to be depressed. Moreover, most teachers indicated how family issues influence online teaching negatively. This has been called 'family resistance' in some studies, where they stated that families may pose challenges when OT is implemented (Hamutoğlu & Basarmak, 2020). While the study highlighted how families prevent their children from using technology, viewing it as a useless tool, the current study highlighted other issues. Among these issues are financial issues, the atmosphere of home and parental attitude. It influenced teachers negatively that some students do not have laptops. Moreover, teachers were worried that students are easily distracted due to the noise at home. They also feel frustrated because parents do not recognise the importance of having a strong internet signal, and they move anytime to see their grandparents. Teachers' feelings showcase their psychological state in virtual classes. The way teachers perceived virtual classes negatively diminishes their SE (Bandura, 1977).

CONCLUSION

Teachers around the globe were thrust into online teaching during the Covid-19 pandemic, which allows for an examination of their beliefs about their SE in this new mode of teaching. The transition has urged the researcher to investigate external and internal factors that influence female Saudi teachers' SE in the ELI. Teacher SE is an important construct because high-elicacious teachers tend to persist longer to achieve their aims. Low-achieving teachers, on the other hand, experience stress and depression when coping with environmental demands. In this study, teacher SE has been measured via teachers' perceptions about external and internal factors that influence online teaching. Overall, the results of this study suggest that internal barriers, such as knowledge, skills, beliefs, and attitudes, affect teachers' SE more negatively than external ones, such as time, technical support, and PDs. Most teachers in the study have prolonged teaching experiences, and hence their epistemological and pedagogical beliefs influenced their beliefs about online teaching. They were more reluctant to cope with new technologies and were not willing to experience a new pedagogy. Although both experienced and novice teachers lack

mastery experiences in online teaching, which is an important source of SE, novice teachers perceived online teaching more positively. However, both experienced and novice teachers required support and assistance, particularly in the online pedagogy knowledge base. Teachers used technology to support traditional teaching activities, not to reform them. Lack of online pedagogical knowledge, along with the powerful impact of negative attitudes and beliefs about online teaching, undermines the teacher's sense of SE. Mitigating the negative effects of both external and internal barriers to technology integration, the study may offer insights into the development of teacher SE in the online teaching environment.

Online teaching has become a convenient contingency plan in case of catastrophes like the Covid-19 pandemic, which took us all by surprise. Therefore, it is necessary that institutions prepare for potential transitions in any prospective situations. Contextual readiness can mitigate the undesirable effects of low teacher SE. This is to say that external barriers should be detected and rectified based on teachers' needs and experience. Besides, managers need to adopt and develop an institutional technology vision. When the institution has a vision, it has clear objectives to achieve, and it promotes the use of technology effectively in the educational-instructional process. Conversely, lack of vision is reflected in teachers' lack of vision concerning using technology. Therefore, this study calls for reform in teacher preparation programs and calls for the need to provide a pedagogically oriented online curriculum. Teacher preparation programs should include transformative learning experiences and engagement in pedagogical practices within their subjects. This may include problem-solving strategies, co-teaching, communities of practice, and mentoring. In this way, teachers' knowledge and skills about online teaching are solidified, which can ultimately improve their SE. Communities of practice where teachers exchange experiences can have a binary effect for raising SE as being a source of vicarious experiences and verbal persuasion. The role of such a social atmosphere to construct knowledge is important in social-cognitive theory where SE is grounded. Additionally, the inconsistency between the curriculum and online pedagogy may result in a lowered sense of SE. Hence, policymakers are recommended to make some adaptations that are compatible with the online teaching mode. Blended learning can be a useful technique to practice approaching teaching and learning with different methodologies. It provides teachers with the experience to navigate the online environment and trains her to accept her new role as a guide and a facilitator as per virtual classes' requirements. Blended learning may help teachers to abandon their preconceived image of their authoritative role, though emphasizing their irreplaceable role in the teaching process.

The study has the following limitations.

1. The survey was conducted online, and the researcher could not videotape them. Hence, non-verbal messages that might reveal teachers' feelings could not be captured.
2. The small number of participants in this research study is another limitation that needs to be acknowledged, which makes it difficult to generalize the different contexts.

Future research can employ different methods to validate findings. For example, including focus groups can help to discuss the issue of SE in online teaching and reveal more barriers that might influence teacher SE. It is also recommended to use a triangulation data collection method, such as observations, to confirm the findings of the study and to detect how virtual classes might affect teachers' practices. Since this study included only female participants, other studies can also include male participants to find recurrent issues that might undermine both genders' SE.

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