Teacher Self-Efficacy and Emergency Online Teaching and Learning During COVID-19

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Abstract

This mixed methods study sought to measure and understand teacher efficacy and experience of teaching online one year into the transition to emergency remote online teaching during the COVID-19 pandemic. This study builds on our earlier work (Dolighan & Owen, 2021) that measured teachers' sense of efficacy for teaching online at the initial stages of the pandemic. We examined the impact of prior experience teaching online, experience teaching online during the pandemic, and access to online training on teacher self-efficacy as they adapt to online learning in the context of the pandemic. What became clear was that teaching remotely online under emergency measures is different from normal online teaching. The results of the study found teachers' collaboration with colleagues to solve issues and collaboratively learn impacts teacher efficacy. We also found that access to technical and pedagogical support resources impacted teachers' sense of efficacy and experience teaching online. Our study makes recommendations for structuring teacher professional development to address the challenges and opportunities of designing effective online teaching and learning contexts that builds capacity in schools to leverage OT&L for emergency remote learning, blended learning and eLearning modes of education.

Introduction

While the COVID19 pandemic is past us, lessons learned from the transitions to Emergency Remote Teaching and Learning (ERT&L) may help shape our policy and practical approaches to online learning in emergency situations such as wildfires, floods, or another pandemic. Our paper focuses on teachers' self-efficacy in the transition to ERT&L during COVID19. We sought to understand teacher efficacy and experience of teaching online one year into the transition to emergency remote online teaching during the pandemic. We examined the impact of prior experience teaching online, experience teaching online, and access to online training on teacher self-efficacy in the context of the pandemic. We found that:
- teaching remotely online under emergency measures differs from "normal" online teaching.
- teachers' collaboration with colleagues to solve issues and collaboratively learn positively affected teacher efficacy.
- access to technical and pedagogical support resources advanced teachers' sense of efficacy and their experience teaching online.

Our learning can be used to structure teacher professional development to address the challenges and opportunities of designing effective online teaching and learning contexts that build capacity in schools to leverage Online Teaching & Learning (OT&L) for emergency remote learning, blended learning, and eLearning modes of education.

COVID19 and Modifications to the Teaching Environment

In the 2020-2021 school year, the pandemic challenged teachers, administrators and school districts to maintain an effective learning environment for students and teachers while addressing the public health emergency. In a Canadian school district, Face-to-Face (f2f) classrooms were divided into cohorts to reduce class sizes and ensure social distancing protocols. School districts established virtual schools, staffed with teachers who chose, for personal or health reasons, to teach virtually or were placed in virtual schools to meet staffing requirements. Boards adopted hybrid learning models that involved f2f classes with some students attending remotely. As coronavirus case numbers rose and schools transitioned a second time to emergency remote online (ERT), the need for real-time and ongoing support for online teaching and training in basic online pedagogy and design skills increased. Our research sought to understand the impact the pandemic on teacher self-efficacy for teaching online in the context of an emergency (ERT&L[1]).

Teacher Self-Efficacy

Teaching self-efficacy is a construct that represents teachers' confidence in their ability to facilitate student learning through the development of students' knowledge, abilities, and values and dynamic interaction of the person, environment and behavior (Bandura, 1989). Self-efficacy beliefs are correlated with the effort people are willing to expend to attain a goal and how persistent they are in the face of adversity and recover from setbacks (Bandura, 1986, 1997). High self-efficacy amongst teachers correlates with elevated levels of student engagement (Martin et al., 2012).

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[1] Note: We use ERT and ERT&L interchangeably.

Online Teaching and Learning Versus Emergency Remote Teaching and Learning

In the context of the pandemic, teacher efficacy has been studied to measure how teachers have managed the transition to emergency online teaching. Pressley (2021) reported elementary teachers who taught virtually had lower self-efficacy than teachers who taught face-to-face during the pandemic while Dolighan and Owen (2021) found that teachers who reported prior experience teaching online had low self-efficacy during the initial stages of the pandemic. Others examined how transitioning to online teaching increased teacher stress and burnout, which are associated with lower self-efficacy (Sokal et al., 2020; Westphal et al., 2022; Ozamiz-Etxebarria et al., 2023).

Research shows that effective online learning involves intentional design, planning of instruction, learning activities and assessment that are structured for the online environment (Means et al., 2014; Hodges et al., 2020). Effective online learning recognizing that learning is a social and a cognitive process while striving to build a learning community (Barbour et al., 2020; Garrison, 2016). As teachers transitioned to online learning during the pandemic, there were no time and few resources in place to consider online course design. Face-to-face learning communities were separated by the remote mode of learning and the social element of learning eroded by separation imposed by the pandemic measures (Sokal et al., 2020).

Collaborative Teacher Professional Learning (PL)

Effective collaborative online teacher learning involves active social and cognitive presence (Garrison, 2017). Darling-Hammond et al. (2017) describe effective teacher PL as both collaborative and active in a way that allows teachers to "transform their teaching and not simply layer new strategies on top of the old …" (p. 7). Garrison (2017) proposed a Community of Inquiry (CoI) model that is purposeful, collaborative and trust worthy to ensure that professional learning is not done in isolation and is influenced through experiences with the physical world and interactions with others. Online collaborative learning frameworks offer models to design online learning opportunities for students while teachers learn the technology tools they are using (vanOostveen, 2019). Garrison (2017) explains that interaction and collaboration in online learning environments support a constructivist view of learning. VanOostveen et al. (2019) propose that learner-centred collaborative online learning environments for professional learning can change teachers' beliefs about learning by changing teachers' online learning experience to incorporate constructivist aspects of learning and provide opportunities to experience new pedagogies. Collaborative inquiry focuses on the needs of the learner and employs a learner-driven approach through collaborative knowledge construction (vanOostveen et al., 2019).

Traditional modes of professional development require professional activity days or release time for teachers. Much professional development (PD) focuses on information disseminated from administrators to "passive" teacher audiences (Darling-Hammond et al., 2017). The CoI framework (Garrison, et al., 2000) provides an understanding of how computer mediated communication can support learning online and enable the implementation of effective online pedagogy. Lock et al. (2017) suggest that CoI supports the design and facilitates self-regulatory learning in online environments, a key component of effective online learning (Cho & Schen, 2013). Hughes et al. (2021) argue that teacher PL can be optimized if teachers are agents of their own learning. Online PL offers an ongoing and sustainable way to collaborate and learn that does not require specific times and designate places to learn.

One lesson emerging from COVID19 is that school districts must be prepared to transition to remote teaching and learning. Teachers and school boards need to prepare for emergencies arising from climate change, societal and inter-state conflict, as well as public health crises. The distinction between ERT&L and OT&L is a second lesson that emerged from the COVID19 experience of educational institutions. ERT&L, as experienced by teachers and students during the pandemic, did not integrate effectively the intentionality of instructional design principles that are important to effective OT&L. Research shows that effective online learning results from intentional instructional design and planning that considers how both synchronous and asynchronous modalities are used to enhance student learning in the online environment (Branch & Dousay, 2015; Martin et al., 2019). Issues of agency, responsibility, flexibility, and choice are key elements (Bozkurt & Sharma, 2020) as are planning and designing with the goal of creating a learning community. The social support and teaching strategies that exist in face-to-face settings often are not transferred to online teaching environments (Corry & Stella, 2018). Marshall et al. (2021) examined teachers' experience of teaching during the pandemic and identified many of the concerns and barriers teachers faced are more issues that related to dealing with the impact of the pandemic than challenges associated with a normal transition to online teaching. Teachers reported having difficulty providing adequate instruction with the appropriate amount of rigor yet lacking the ability to hold students accountable. For teachers, the loss of control of the learning environment was a factor in their sense of efficacy for emergency remote teaching online (Marshall et al., 2021). In Ontario, the provincial government and school boards set policies aimed at reducing student stress, which reduced student accountability during the pandemic (Ontario, 2020). Dolighan and Owen (2021) found that teachers' sense of efficacy was lowest for student engagement during the pandemic. During the second transition to ERT&L, school boards were unprepared to effectively "pivot" to online learning in an emergency, similar to challenges reported during the first wave of COVID19 (Barbour et al., 2020).

Supporting Teachers Teaching and Building Online Learning Environments

Teacher self-efficacy for managing learning in ERT&L environments was tied to their beliefs about technology and how students learn. Research identifies persistent beliefs about the inferiority of online learning and attitudes about pedagogy and learning online as barriers to effective teaching in online environments (Kilgour et al., 2019; Northcote et al., 2015; Northcote et al., 2019; Hodges et al., 2020). Changing teachers' attitudes and beliefs regarding the use of technology in teaching environments involves addressing personal factors such as confidence or self-efficacy and pedagogical knowledge on the use of educational technologies and beliefs about technology and student learning. Being required to use multiple forms of educational technology during the pandemic-induced transition to online learning reinforced the need for and importance of effective and targeted teacher professional learning (PL). Targeted PL and virtual, on-demand support for online instructional design enhance teacher use of resources and helps promote self-efficacy for online teaching (Beach, 2018; Dolighan & Owen, 2021). Effective professional development is ongoing, is continually updated, and extends the professional knowledge and beliefs of teachers (Tondeur et al., 2017). Effective teacher PL enables internal changes in knowledge, attitude, and beliefs and fosters a culture of collaboration and inquiry that sustains change (Donohoo & Katz, 2017). Dolighan & Owen (2021) found that using the Learning Management System (LMS) in everyday teaching practice prior to the pandemic was associated with higher teacher efficacy for online teaching in the first stages of COVID19. Being prepared to transition to online learning, therefore, involves developing a strategy to build online teaching capacity that values online teaching as a viable mode of effective

education as well as integrating online teaching pedagogy and use of technology in ways that build efficacy for ERT&L.

Research Questions

Our study sought understand teacher efficacy one year into the transition to emergency remote online teaching during the COVID-19 pandemic. We argue that prior experience teaching online and access to online training builds greater self-efficacy amongst teachers as they adapted to online learning during the pandemic; collaboration with colleagues to solve issues and collaboratively learn positively affects teacher efficacy; and having access to technical and pedagogical support from technological support teams enhances teachers' sense of efficacy. We asked four research questions:

RQ1. How confident do teachers feel in preparing, conducting, and evaluating online courses?

RQ2. Is there a difference in online teaching self-efficacy a year later into the pandemic compared to the initial transition?

RQ3. In what ways do teaching assignments, the choice to teach virtual or face-to-face and willingness to continue teaching online impact teacher self-efficacy?

RQ4. In what ways do experience with online teaching, collaborating with colleagues, and training, resources and support from the school board influence teachers reported self-efficacy for online teaching?

Emerging from these questions, we hypothesized that:
- There is a positive relationship between levels of online teaching efficacy and years of online teaching experience.
- Teachers' sense of self-efficacy for teaching online will be higher than during the initial transition to emergency remote online teaching.
- Teachers who a) chose the virtual school placement and b) are willing to continue teaching virtually, will have significantly higher levels of online teaching efficacy.
- Teachers who collaborate with colleagues and access technical and pedagogical design support contacts will have higher levels of online teaching efficacy.

Methods

To answer these research questions, we invited teachers at an urban school district in Ontario, Canada to participate in the study. Following ethics approvals, email invitations were sent to all teachers to complete a web-based survey using Microsoft Forms. Out of 1631 teachers employed at the board, 265 (16.3%) responded. Of the respondents, 88% reported teaching $\leq$ 5 years online and 59% reported $\leq$1 year of online teaching experience, mostly during the first year of the pandemic. The researchers administered the Teachers' Sense of Efficacy for Online Teaching (TSEOT) survey (Dolighan & Owen, 2021), which was based on the Teacher Sense of Efficacy Survey (Tschannen-Moran & Wolfolk, 2000) and the Michigan Nurse Educators' Sense of Efficacy for Online Teaching instrument (Robinia & Anderson, 2010). The TSEOT showed a Cronbach alpha of .963 with our sample (n=236).

To complement the quantitative survey, we administered a semi-structured qualitative questionnaire designed to delve into teachers' experience of teaching online during the pandemic and to identify the successes and problematic issues associated with learning to teach online in the context of the pandemic. Questions were:

1) Describe the strategies for online teaching you feel worked to promote student engagement and student learning.
2) What do you feel you need to learn to teach online effectively?
3) How do you feel the pandemic impacted online teaching and learning?
4) Is there anything you would like to add regarding your experience teaching during the COVID-19 pandemic?

Data Analysis

Study questions were assessed by calculating means and standard deviations of the TSEOT survey scores (Horvitz et al., 2015; Robinia & Anderson, 2010; Tschannen-Moran et al., 2001) on four measures: *student engagement, classroom management, online instruction strategies,* and *computer skills*. The Pearson correlation coefficient was used to determine relationships between interval variables. Analysis of variance (ANOVA) was used to assess differences of means of online teaching efficacy scores. An alpha of .05 was used for all tests.

Responses to the semi-structured open-ended questionnaire were coded and thematically grouped to identify themes and patterns (Glaser, 1992) that reflected teachers' challenges and success teaching online. The data from the quantitative survey measured the self-efficacy of teachers. The qualitative and quantitative data were triangulated to identify the challenges and barriers that teaching staff encountered as they engaged online pedagogy and gained experience teaching in online environments (Cresswell & Miller, 2000).

Quantitative Survey Results

Our study found that there is a positive relationship between levels of online teaching efficacy and years of online teaching experience (Horvitz et al., 2015; Robinia & Anderson, 2010; Tschannen-Moran & Woolfolk Hoy, 2001). Teachers' sense of self-efficacy for teaching online was higher compared to the initial transition to emergency remote online teaching in the spring of 2020 (Dolighan & Owen, 2021). Significant positive correlations were found with having taken an online Additional Qualifications (OCT, n.d.) and/or Professional Development (PD) sessions for online teaching; being placed in or choosing a virtual placement; regularly collaborating with colleagues; a willingness to continue to teach online; and the use of LMS and the subscale *Use of technology and computers*. There were no significant correlations with using a board learning management system or using virtual tech support and overall higher levels of efficacy.

Teachers who taught in primary and junior division had lower self-efficacy for the subscale student engagement than did secondary teachers. Teachers who were placed or chose virtual teaching had higher efficacy than those who taught face-to-face. Teachers who reported experience teaching online, prior online training, taken an online AQ course or regular collaborations with colleagues scored higher on perceived efficacy in terms of student engagement, instructional strategies, and online classroom management (Table 1).

Scale	Mean	SD	Min	Max
Student Engagement	5.23	1.44	1.25	9
Online Instructional Strategies	5.77	1.51	1.25	9
Online Classroom management	5.95	1.36	1.50	9
Use of computers and technology	6.58	1.35	1.88	9
Overall TSEOT score	23.54	5.16	6.37	36

Table 1: Teachers' Sense of Efficacy for Online Teaching

Our study found a positive relationship between levels of online teaching efficacy and online teaching experience (Table 2). Experience teaching online correlated with higher confidence; however, 88% of respondents reported ≤ 2 of experience online, most would have been teaching online during the pandemic. Teachers who chose virtual school placement had significantly higher levels of online teaching efficacy and those who chose virtual school placement had higher efficacy than those who were placed in the virtual school. Those teachers who indicated they would continue to teach online given the choice have significantly higher levels of online teaching efficacy. Finally, teachers who reported experiences of collaborating with colleagues and accessing technical and pedagogical design support training have significantly higher levels of online teaching efficacy.

	Subscale Student Engagement	Subscale Online Instruction	Subscale Online Classroom Management	Use of Computers and Technology
Teaching Assignment n=265	r=.144, p=.019*			
Placed in or chose virtual n=61	r=-.282, p=.028*	r= -.321, p=.012*	r= -.326, p=.010*	r= -.309, p=.016*
Yrs. teaching online n=244	r= .214, p=.001**	r= .198, p=.002*	r= .148, p=.021*	r=.186, p=.004*
Taken online AQ, PD N=263	r= .208, p=.001**	r= .144, p=.019*		
Had online training N=262	r= .165, p=.008*	r= .145, p=.019*	r= .138, p=.025*	r= .156, p=.011*
Collaborate with colleagues n=263	r= .157, p=.011*	r=.161, p=.009*		r=.186, p=.002*
Would continue to teach online N=264	r= .481, p=.001**	r= .497, p=.001**	r= .386, p=.001**	r= .394, p=.001
Using LMS N=259				r=.183, p=.003*

* Correlation is significant at the .05 level
** Correlation is significant at the .001 level

Table 2: Pearson Correlation

Semi-structured Questionnaire Results

Through the TSEOT, participants described what they felt were the most pressing issues regarding professional learning and support for teachers designing and implementing online learning environments. Responses to the TSEOT survey (n=233) were coded and organized by themes that emerged from the responses. The data were merged and compared with the semi-structured questionnaire.

To gain insight into teachers' experiences teaching online during the second wave of COVID19, participants who identified as continuing to teach online in the 2020-2021 school year were asked to provide details of their experiences of teaching online. Thirty individuals were invited to a semi-structured interview. Nineteen participated. Eight were "secondary in-school", three were "secondary virtual", two were "elementary in-school," and six were "elementary virtual." Like the TSEOT survey respondents, most (17/19) respondents had ≤ 2 years of online teaching experience. Participants described strategies that promoted student engagement and learning online, identified what they needed to learn, and how they felt the pandemic affected teaching and learning online. Data from the questionnaire were collated, analyzed using grounded theory methodology (Strauss & Corbin, 1998) and compared to determine focus categories. Responses were coded and organized into categories. Nine themes emerged from the data analysis (Table 3). Reponses were assessed as positive or negative sentiment based on how the statement reflected aspects of their experience.

Themes	Frequency	Positive sentiment	Negative Sentiment
Assessment for online learning	22	8	14
Home support for families	9	-	9
Online instruction	12	3	9
Personal growth and learning	3	3	-
Stress, anxiety and exhaustion	26	-	26
Student engagement	71	25	46
Time to learn and prepare for teaching	56	-	56
Training resources and support	96	1	95
Use of technology	49	11	38
Total	344	50	293

Table 3: Qualitative response themes

Analysis

Respondents overwhelmingly reported a need for more time and resources in order to teach online effectively (Table 3). Respondent 13 reflected the toll that a lack of time and resources made on them and their professional practice:

> Some resources were sent out by the board, but you literally had no time to go through everything. It all seemed so overwhelming. I tried to be the best online teacher, burnt myself out at the beginning and then learned that I don't need to recreate everything myself and learned to use resources that were created by others online.

Teachers who reported collaborating with colleagues often-to-regularly had a higher sense of efficacy than those who did not collaborate. Teachers who reported doing online training also had higher self-efficacy measures. The transition to emergency remote online teaching required a different approach to how training and access to resources for online teaching was done.

We found a significant positive relationship between levels of online teaching efficacy and years of online teaching experience. Experience teaching online correlated with higher confidence, even for respondents whose only experience teaching online was during the pandemic. A lack of online teaching experience seemed not to be a barrier and teaching in the virtual setting had positive influences. Positive attitudes and willingness to teach online were associated with increased efficacy and capacity to learn to teach online effectively.

Teachers collaborated to solve problems, learned how to use online technology, and created learning experiences for students. Significant correlations were found with teachers who regularly collaborated with colleagues; teachers who would continue to teach online and the dependent variable measure of the overall TSEOT scores, t=2.092, p=.042 (Table 2). The only subscale that showed a significant relationship with *Collaborating with colleagues* was *Instructional strategies*, t=2.493, p=.016 (Table 2). Teachers felt more efficacious when sharing instructional strategies and solving technology problems associated with instruction for the online setting. Our findings that higher efficacy for online teaching was associated with teachers who collaborated regularly with colleagues aligns with the positive influence of supportive culture on teachers' use of technology (Jung et al., 2019). For example, one teacher described the importance of sharing and planning with grade partners:

> I pushed through to the end of the year with the support of 2 fabulous teaching partners, and there's another key element ... I collaborated with OUTSTANDING grade partners. We split the planning on heavy subjects … so we could share polished lessons and activities. That was … a major support to my teaching. (Respondent 11)

Our study (Table 2) reported that teachers who are willing to continue teaching virtually, if given the choice, have significantly higher levels of online teaching efficacy. Teachers' *willingness to teach online* showed a significant correlation with all subscales and overall TSEOT score. The results of the regression test showed that all but the relationship with *Online classroom management* subscale scores transfer to the larger population.

Teachers who reported experiences of collaborating with colleagues and accessing technical and pedagogical design support contacts had significantly higher levels of online teaching efficacy. Chan et al. (2021) also found a sense of belonging and connectedness and collaboration with colleagues to learn and solve problems were associated with teacher well-being. A major issue that resulted from the challenges and struggles of suddenly transitioning to online teaching due to the pandemic was the reinforcement of the view that online teaching and learning is inherently inferior to face-to-face instruction. Some observers associated the remote instruction offered in spring 2020 as typical of OT&L, validating their perception that online teaching is not as effective as teaching face-to-face (Hodges et al., 2021). However, understanding the difference between ERT and OT&L is an important step toward countering the stigma that online learning is inferior to face-to-face learning (Hodges et al., 2021). Experience teaching online correlates with higher self-efficacy. In the second phase of COVID19, the lack of online teaching experience seemed to be less of a barrier to learning to teach online effectively than expected. One teacher who had 1.5 years teaching online during

the pandemic described learning to use the affordances of Zoom to benefit students, "The use of the Zoom chat [meant] students could [send a] private message to me, alleviating the anxiety of answering questions in front of a class, creating a safe space" (Respondent 3).

Teachers who responded to the semi-structured questionnaire reported positive influences from that teaching in the virtual setting. A positive attitude and willingness to continue teaching online were associated with increased efficacy and capacity to learn to teach online effectively. Yet, while we also identified concerns and troublesome issues (Perkins, 2006) that teachers experienced adapting to ERTL, we identified teachers who overcame barriers and demonstrated that sound pedagogy is part of online learning. Higher efficacy scores of "virtual teachers" (Table 2) suggests that the daily experience of online teaching was closer to actual non-emergency online teaching than the transition to emergency remote that occurred in the second year of the pandemic. Given the higher sense of self-efficacy for online teaching in the teachers who indicated they would continue to teach online and those who chose the virtual school, having a positive attitude and willingness to learn offers a potential for peer leadership for online teaching and learning.

Stress, anxiety, and exhaustion was a dominant theme that emerged from teachers' experience teaching online in the pandemic even though no specific survey question addressed teacher sense of well-being. Pressley and Ha (2022) linked teacher efficacy to stress and anxiety levels. Under normal circumstances, teaching online can be stressful and exhausting (Horvitz et al., 2015: Northcote et al., 2015). Mandated online instruction, pandemic restrictions, and personal and family health concerns compounded the stresses teachers experienced while teaching online in both phases of the pandemic (Pressley & Ha, 2022). One teacher describes the struggle of teaching from home and supporting her own children,

> teaching during the pandemic was extremely difficult on our family unit. We had three boys ages 5, 7 and 9 and … my husband worked full time. We were fortunate to have jobs during the pandemic, but mentally, we struggled to keep our family happy and engaged in school. (Respondent 13)

The most common experience reported by teachers was being unprepared to teach in an online setting due to lack of training, resources and support. Respondent 144 reflects the overwhelming feeling associated with the job demands, "Not enough time to learn the variety of apps, techniques, tools, and skills as well as plan and prepare for content delivery, assessment & evaluation, IEP planning etc. ... OVERWHELMING!" If teachers are unaware of resources that were in place or felt there was not enough time to prep and learn online teaching, their experience of stress, anxiety and exhaustion increased. These factors negatively affected teachers' sense of efficacy.

Our findings highlighted areas of teacher concern with online teaching and demonstrated aspects in which training, support and personal experience can improve the capacity and confidence of teachers teaching online and particularly engaging in emergency remote online teaching (Hodges et al., 2020).

Discussion

We show the need to develop evidence based, collaborative PL strategies for building capacity for online teaching and ERT&L. What took place during the pandemic was an

emergency measure that was different from non-emergency online learning and hindered teachers and students from transitioning to effective online learning (Marshall et al., 2021). Attitudes that viewed online learning as inferior to f2f were reinforced by restrictive academic measures hindered teachers' perceived self-efficacy for online teaching (Dolighan & Owen, 2021; Marshall et al., 2021). Teachers who were willing to teach online had higher self-efficacy scores (Table 2). Those who identified connections between professional growth and their experience teaching online during the pandemic revealed positive attitudes associated with overcoming challenges of learning to teach online. Respondent 15 noted "the pandemic caused many teachers … to 'dive in' and learn to use technologies and platforms…" Developing positive attitudes toward online learning happens when teachers see students learning and being successful in online learning environments (Horvitz et al., 2015).

Job related stress expressed by teachers is evident from the qualitative data. Frustration, stress and exhaustion were created by living with the pandemic outside of teaching (Merrill, 2020). The need to train staff for transitions to ERT&L is evident from the experience of teachers' frustration trying to adapt to teaching online. Building capacity for using technology as a regular part of teaching in f2f classrooms could make the transition to online in an emergency smoother and build resiliency in the education system.

Participants described successes teaching online when they integrated effective pedagogy with technology. Those who identified concerns and frustrations with the use of technology focused on not being able to engage students. This study supports the need to provide teachers with technology training that meets their immediate needs in the transition to ERT&L. The successes described by teachers reveal learning how to use new technology and build online teaching skills was most effective when integrated with effective pedagogy that makes use of the multitude of technology tools. Teachers who described success engaging students and fostering learning described using technology as a tool for students to work in groups, collaborate, and develop self-regulatory learning skills (Lock et al., 2017). The tools that enabled pedagogically sound online learning can be learned in the context of sound pedagogy and interaction through ongoing teacher PL.

Our study revealed concerns with instructional strategy and online assessments. Marshall et al. (2021) recommended that digital learning days be incorporated into the school year. Future transitions to emergency remote learning would not be as drastic if teachers experienced how integrating technology can enhance learning face-to-face. Thus, teachers' familiarity with digital learning would support emergency remote transition preparedness (Marshall et al., 2021). We found that using existing technology as platforms for digital learning experiences can be effective in ERT&L situations (Dolighan & Owen, 2021). Using LMS platforms offer ways to organize daily learning goals, tasks and assignments that students can access anywhere, anytime and should be the same f2f or remote. Other researchers show that incorporating aspects of blended learning develop self-regulatory learning skills for students and help teachers be more familiar with how technology can assist student development of these skills (Barbour et al., 2013; Lock et al. 2017; Stevens, 2020).

Training, resources, and support was the most frequently referenced theme among participants in this study. Yet, there is a lacuna in the research on how administration can provide effective training and teacher PL opportunities to integrate current learning management systems for face-to-face and online learning (Dolighan & Owen, 2021). Our study revealed the lack of time to learn and prepare to teach online as a significant challenge, while Hughes et al. (2021) argue that online teacher PL provides a flexible way to meet and

use valuable time for learning new technologies. School administrators can support ERT&L training and capacity building by supporting collaborative teams learning online. While more research needs to be done regarding the perspective and experience of administrators during the pandemic, fostering positive attitudes towards online learning can be a good start for support that builds capacity and recognizes the need to be prepared. Online teaching requires a commitment to ongoing professional learning (Darling-Hammond et al., 2017).

We learned that teachers were collaborating with colleagues and directing their own learning for online teaching. Creating a collaborative learning environment and supporting ongoing PL are important as educators engage with online teaching and learning. Online learning platforms for PL provide frameworks on which teachers could scaffold online learning and create flexibility to learn and manage their time (Garrison, 2017). When learning is collaborative and shared collective efficacy increases (Donohoo & Katz, 2017). We found that teachers who collaborated with colleagues had higher personal efficacy, which helped build collective efficacy and confidence teaching in a digital space (Donohoo & Katz, 2017).

Our findings demonstrated the impact of stress, anxiety and exhaustion in the emotional responses of teaching staff to the lack of time to learn and prepare to teach online. The emotional element evident in teachers' description of their experience revealed a sense of being overwhelmed and overworked due to restrictions and changing teaching environment arising from the pandemic. Descriptions of exhaustion and stress affecting teachers' ability to work echo Pressley and Ha (2022), who found teacher exhaustion and stress levels directly impact teachers' sense of efficacy. Related themes of *time to learn and prep* and *training, resources and support* identified mental health and well-being as an area for further research.

Conclusion

Our recommendations are based on teachers' experience and can help build capacity for effectively transitioning to ERT&L. Future research needs to include the experiences and perspectives of administrators and support staff in determining effective strategies for ERT&L preparedness. While we focused on teachers' experience of reaching and learning, effective ERT&L strategies should include student perspectives. Finally, future research should consider how to build collective capacity to transition to remote teaching and learning that involves the entire school community.

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