ESSAY

Moving on from the pandemic in school- a roadmap to flexible modalities [version 1; peer review: awaiting peer review]

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Abstract

Teaching during the remote episodes of the Covid pandemic demonstrated that the majority of classroom teachers replicated classroom practices rather than adapting to a new system for learning. During the rapid shift online, professional development of teachers focused on upskilling rather than changing and challenging teaching practices. As a result, students were unmotivated and disengaged. The problem now exists that teachers are stuck with a lack of understanding of how to teach online with the likelihood of further external uncontrollable occurrences. Additionally, there is no roadmap forward on how to harness the benefits of learning online through the emerging flexible modalities of blended or hybrid teaching in schools. The current risk is that schools return to classroom based pedagogies and miss the opportunities that learning online brings. This paper responds to this crucial stage in schooling offering a way forward. To do this, there is a need to pause in time, to reflect on what is known and what is important to consider to be able to move forward effectively. As such this paper firstly examines the rush to get online and the frenzied up-skilling of teachers so that we have a better understanding of what skills were developed. This paper then synthesises the literature to identify what pedagogical skills are needed to effectively teach online in a schooling context. Drawing extensively from theories and empirical studies over the last 30 years this paper then presents a roadmap forward that offers professional development of a different kind identifying how to change teachers’ practices from replicating the classroom to teaching effectively online. Directives and implications are provided for school leaders, teacher educators and researchers in the field of digital pedagogical transformation. It is a critical time in education to shift from classroom based pedagogies to flexible modalities.

Keywords

Online learning, blended learning, flexible learning, teacher change, teacher beliefs, remote teaching
Introduction: The problem in schools now

The shift to online learning in schooling happened and will continue to happen, with the move to hybrid, blended and or recurrences for the need for off-school campus remote teaching approaches (Starkey et al., 2021). Whether this integration of online learning is a response to social, economic, education and or environmental factors, governments worldwide have demonstrated that the continuation of education is a necessity through online approaches (Ferri et al., 2020; Winters, 2021). However, evidence suggests that teachers’ first move to online learning, which in the majority occurred during the COVID-19 pandemic, indicated that they were unprepared for such a pedagogical shift (Reimers & Schleicher, 2020).

What was evident in research during this time was that teachers replicated traditional or familiar classroom practices with online tools (Ewing & Cooper, 2021) and in the majority felt they were actually prepared to teach online (Howard et al., 2021). This presents a concerning dichotomy, in that teachers felt prepared to teach online with evidence suggesting the teaching practices were not effective. It has been clearly evidenced that classroom-based practices do not transfer effectively to the online learning space (Palloff & Pratt, 2013) as the environment is different requiring different pedagogical approaches (Bains, 2004; Rodrigues et al., 2019).

As a result there has been a major international call for developing and supporting teacher competence in effective online pedagogical practices (Bao, 2020; Delcker & Ifenthaler, 2021; Reimers & Schleicher, 2020) with specific identification of professional learning needs such as teachers’ pedagogical competencies to facilitate learning online, create clear instructions, provide feedback and keep students engaged (Howard et al., 2021; Yates et al., 2020). These pedagogical competencies have been identified as critical to the online learning dynamic which is based on a networked system of user engagement (Prestridge et al., 2021). This online networked learning system orientates to users, that is students, engaging in many to many communication practices rather than one to many. One to many communication is more reflective of a traditional classroom based system of engagement, being teacher to students. What was observed during the remote teaching periods was a domestication of an online networked learning system. Bigum (2012) introduced the term ‘domestication’ of technologies to highlight that teachers were choosing digital technologies and using digital technologies that suited or were made to fit the familiar practices of the classroom. An example of this can be seen in teachers’ choice for popular quiz based tools such as Kahoot, Quizizz, Plickers. As an example, Boommoh et al. (2021) found that secondary school teachers chose these kinds of tools as they are easy to use, free and ‘support a classroom learning environment and classroom engagement’ (p. 19).

In other words, the tool is chosen to maintain the same system of communication that is represented in the classroom, that being teacher controlled.

This domestication of technology to fit the teaching structures and practices of the classroom directs and controls students engagement within a limited system dominated by the teacher. Students are not engaging freely with each other rather they are responding to the teachers’ communication demands. Teachers’ domestication of the online learning environment were evidenced during remote teaching in that they chose particular digital tools to engage students with or used tools in ways that limited students communication systems to the one to many practices. In this way teachers asked students to respond to them in the main or did not organise student to student engagements. Some examples of domestication of the online learning space include the implementation of practices such as creating teacher made video content and sending these out to students and/or providing written material for students to complete with little interaction around this content or peer to peer engagement with this content. Other examples include schools that timetabled learning at home zoom sessions that replicated school 40 min subject-learning periods and also replicated classroom instruction such as a teacher teaching off a whiteboard or presenting a PowerPoint. Ewing & Cooper (2021) concurred and found that during the remote teaching period teachers were able to support students’ connection to content but were unable to achieve other aspects of effective online learning such as social and cognitive engagement.

This initial domestication of online learning using classroom-based teaching practices can be theorised from long-standing categories of technology use such as teachers’ supplementing practices with technologies rather than transforming their pedagogical practices to be effective within a new digital environment or with a new digital tool (Ertmer et al., 2012; Prestridge & de Aldama, 2016). We are currently at an important juncture in education to turn back to only classroom based teaching and learning or build on remote teaching and learning experiences and transform our approaches in blended or more flexible modes of schooling. The latter is needed, especially in case of further pandemics and the need to shift rapidly online.

To transform pedagogical practices so that new approaches are adopted by teachers when using online tools and environments, two elements are required. Firstly, an understanding of the learning tool or online digital ‘networked’ system. Secondly, a shift in teachers’ mindset about how they are teaching, often considered as a change in pedagogical beliefs which identifies the pedagogical reasoning for using technologies in particular ways (Ertmer, 2005; Prestridge, 2012). Both are needed and will be explored in this review. In the next section, effective online teaching and learning pedagogies will be examined within the literature. Following this will be a roadmap forward which considers how to change teachers’ practices so that they experience a shift in their pedagogical beliefs that appropriate a change in how they
understand and teach online. Unless we can do this, online teaching designs will remain like classroom learning practices which limits the opportunities that online offers.

**Establishing online pedagogical practices for blended and online learning environments**

Firstly, what does learning online look like and what are considered effective pedagogical practices online that align to a socially networked system of learning? In this section online learning is considered to be when students and teachers are using digital tools where the interaction is online. This could mean that students and teachers are at a distance or that the digital tool is being used as part of classroom based instructions but the interaction between the students is online and can be done as part of classroom activities or outside of classroom time. This has been defined as a blended approach (Ryan et al., 2016). As there are many definitions and grey lines between online learning, distance learning and blended learning designs (Singh & Thurman, 2019) and now moving into remote and hybrid approaches, this work examines the component of learning that occurs through an online digital tool or in an online environment.

We know that teaching online is different to classroom teaching and teachers are considered learning engineers rather than instructors (Bains, 2004). As a learning engineer the teacher’s role is to facilitate or ‘engineer’ engagement, engagement being the key to unlocking the potential of online learning (Bliuc et al., 2010; Chen et al., 2020; Yen et al., 2018). Noted through the pandemic, studies by Ewing & Cooper (2021); Howard et al. (2021) and Yates et al. (2020) indicated that there was a lack of student social and cognitive engagement. As a teacher then, to engineer social-cognitive engagement online through a Microsoft Teams discussion forum or a synchronous Zoom chat, student engagement can be considered in three ways: 1. Student to student to teacher; 2. Student to content; and 3. Student to interface (see conceptual frameworks proposed by Moore, 1989 and Hillman et al., 1994). In drawing these three together, teachers engineer student to student engagement through the teacher around content bounded within a digital interface which affords certain kinds of interactions.

Aligned with an online socially networked learning space, the focus of engineering engagement is to enable student to student interaction. Student to student interactions is desired for the dual purpose of motivating and engaging students as well as giving opportunity for co-construction of knowledge (Borokhovski et al., 2012). Many studies and reviews highlighted that in order to develop student to student interactions, there needs to be teacher to student interactions to help facilitate this (Bervell et al., 2020; Brinthaupt et al., 2011; Palloff & Pratt, 2013; Prestridge & Cox, 2021), especially in the early stages of an online learning period or when using a new digital tool (Bervell et al., 2020). Importantly, teacher to student interactions mediates student to student interactions. However, only low levels of teacher to student interactions are necessary to maintain progress on group activities and discussions (Borokhovski et al., 2012). In other words, once an online learning system is created the teacher’s role is more active at the beginning phase moving to a co-participant or co-learner through the on-going discussion or activity. In order to generate discussion between students, encouragement and prompting is often an essential feature of the teachers’ role. Also it is important to create the community, building online relationships and establishing protocols around what is considered effective interaction for the discipline and age group (Baran et al., 2011). Lastly, in an online environment the teacher needs to model how to engage with the content within the interface and with each other. Through the role of the modeller the teacher is teaching how to learn online and how to appropriately engage (Dubuclet et al., 2015).

Both the development of an online community and the organisation of collaborative inquiry are critical to engineering students’ online engagement (Bervell et al., 2020; Brinthaupt et al., 2011; Dubuclet et al., 2015; Herman, 1979 et al., 2018; Palloff & Pratt, 2013). Developing a community of learners requires a different approach to establish student to student support systems, such as answering each other’s questions, mentoring and study groups (D’Agustino, 2012) and is a shift for students from independent learning to interdependent learning (Dubuclet et al., 2015). For this interdependence to occur, components of online learning can be designed as project-based or inquiry-based so that temporal and discursive practices are at the forefront of online activities (Borokhovski et al., 2012; Kalogeropoulos et al., 2021; Sullivan et al., 2020). When engineering online collaborative inquiry student engagement can be considered in terms of three engagement types: cognitive engagement-students’ discipline strategies, application of ideas and persistence in problem-solving; social engagement - students interests and attitudes; and behavioural engagement - learning habits and study skills (refer to the seminal works of Fredricks et al., 2004; Jones, 2008; Skinner & Belmont, 1993). It is helpful to both define and consider different student engagement types online and the teachers’ role and responsibility in developing all of these. To support student engagement through online collaborative inquiry Kalogeropoulos et al. (2021) suggests reducing the quantity of tasks online with the teacher taking greater direction to facilitate student interactions and feedback while Sullivan et al. (2020) encourages the teacher to utilise student responses as teaching opportunities and for student-to-student feedback.

In moving forward, teachers who are using online digital tools and or environments can harness socially networked system of learning through shifts in their pedagogical role from instructor to co-learner, modeller and co-contributor. This has been well considered in our understandings and experiences of remote, distance and online teaching research literature. Finally, these roles reflect the work of Erica McWilliam’s (2008) long-standing call to ‘unlearn’ the pedagogical habits that are no longer valuable for new communication mediums. McWilliam posed a new category of the teacher’s role
beyond the Sage-on-the-stage and Guide-on-the-side to harness the pedagogical affordances of new technologies. In this she proposed that teachers adopt the role of a ‘Meddler-in-the-middle’ where mutual involvement in teaching and learning is argued as the dominant requirement for a post millennial social world. The ‘Meddler in the middle’ represents a pedagogical shift to new ways of working with technologies and students. It is to this that we now turn, in exploring just how to shift teachers’ pedagogies to ‘Meddle in the middle’.

**Professional development of a different kind**

Most teachers are prepared for and have only experienced classroom-based pedagogies which have strong cultural cues for learning behaviours, rules and student engagement practices (Shernoff, 2013). As such, teachers were unprepared for the rapid shift to remote teaching and how to, if at all, adopt new practices for an online environment distinctly unfamiliar and different to the classroom. Added to this, is the complex situation that simply transferring traditional instructional practices from the classroom to the online environment are doomed to fail (Feltier et al., 2007). This domestication of the online environment was evidenced by student disengagement and lack of motivation during the remote schooling period (Ewing & Cooper, 2021). Also during the pandemic we saw a rapid movement to upskill teachers and help them understand online instruction through courses, school based training and through their own social media networks and communities (Pretridge & Cox, 2020; Trust et al., 2020; Ulla & Perales, 2021). These professional development opportunities were more responsive to technical, pedagogical and social-emotional support rather than the need for pedagogical change, exploration and reformation.

It has long been established that professional development in educational technologies focuses on supporting teachers’ effective pedagogical use of technologies rather than upskilling the teacher on the functions of a digital tool (Lieberman & Miller, 2014). Little (1993), in her early work in the 1990s focused on empowering teachers to act as shapers, promoters and well-informed critics of education reform. Before the pandemic, Philipsen et al. (2019) reiterated as part of professional development of online and blended learning pedagogies that teacher change is a pivotal component, especially for the teacher’s roles and their pedagogical beliefs. Moreover, professional development is considered to involve changes in a teacher’s capacity for practice associated with shifts in professional knowledge, attitudes, beliefs and or mindsets, especially if it is associated with the teacher’s needs and interests and therefore situated within their teaching practice (Albion et al., 2015). These types of attributes are second order barriers to the integration of technologies (Ertmer, 2005) and have been found to be much more difficult to shift but have greater potential for enabling effective appropriation of digital technologies (Pretridge, 2017). Clearly, changing teachers’ pedagogical beliefs as part of professional learning and development so teachers begin to ‘Meddle in the middle’ and engineer learning online is critical to this current pursuit.

How to change pedagogical beliefs and what elements of professional development are needed is now considered.

Beliefs that form through personal experience are called underived beliefs and beliefs are established during earlier experiences and become stronger over time as they are used to process subsequent experiences (Pajares, 1992). Teachers’ pedagogical beliefs are supported by strong authority and broad consensus (Albion & Ertmer, 2002) and are not easily changed. Comas-Quinn (2011) suggest that one’s educational beliefs are strongly related to certain role attributions teachers hold towards themselves and their students. Beliefs change through a conversion process slowly over time, described by Nespor (1987) as a Gestalt shift. We often think that beliefs change through the marshalling of evidence, but this slow merger approach means that change in beliefs is associated with the processes of gaining knowledge. In this process, when a disruption to the belief and belief system occurs the individual ends up dissatisfied with their existing beliefs (Posner et al., 1982). This suggests that pedagogical beliefs must be challenged in some way for a belief to change. With regard to professional development, the seminal work of Guskey (2002) proposes that when teachers’ try something new in their classroom and there is a change in student behaviour, learning outcome, interaction and or instruction that then affects a change in a teacher’s belief. This ‘change’ seen by the teacher creates the disruption, the Gestalt shift, causing the new practice to be trialled again, re-implemented and with on-going experiences, the new pedagogical practice is maintained. In essence, the trialling of a practice precedes change in beliefs, which is congruent with one’s experiences in the formation of beliefs. Maintaining that practice then becomes critical to ongoing reformation of beliefs that inform and reform practice. However, it is important to first establish teachers’ pre-existing beliefs so that these can be open to examination and discussion as part of professional implementation, learning and development (Levin & Wadmany, 2005).

The pandemic period and the shift to remote teaching forced teachers into an experimental period where new teaching practices were being trialled. This exploration would have led to many disruptions, many new understandings about how students learn online and many trials of different pedagogical strategies. However, as indicated previously, professional development during this time was more oriented towards pedagogical and technical support rather than challenging how teachers were designing learning and what beliefs were informing these practices.

**Looking forward to disrupting how to teach online**

In the context of supporting teachers to effectively use online digital tools and environments it is important to consider that change in both pedagogical beliefs and practices are necessary. Without change in pedagogical beliefs there will be no change in teaching practice, domestication of the online system will be maintained. This brings to light implications for teacher professional development, such as the
requirement of developing a conscious ‘knowledge-of-practice’ (Cochran-Smith & Lytle, 2001) where teachers come to know and understand their beliefs that inform their practices, actively exploring the ‘truth’ and ‘reality’ of these beliefs during implementation of their practices. This ensures that classrooms or the ‘online-classroom’ become the site for professional inquiry around which reflection and critical discussion with colleagues occurs (Darling-Hammond, 1998). Additionally, there is a need for an extended period of professional engagement for reformation of beliefs to be strengthened (see Levin, 2015; Miranda & Daminco, 2015).

The remote teaching period provided time to trial and explore online teaching and learning practices. Harnessing these disruptions as critical professional learning events is needed to continue the reformation process, especially as teachers are now blending online activities with classroom activities and exploring new possibilities for teaching in and beyond the classroom. It is important to remember that professional learning has to be disruptive while also being supportive. Collegiality in professional learning is fundamental in building trust and camaraderie but without the opportunity to engage with colleagues in critique there is no need for collegiality or the professional learning community. In other words, a learning community is built on camaraderie but without the opportunity for learning to occur through critique, there is no point in membership (Prestridge, 2009). Fundamentally, teachers learn through professional communities as they are given the opportunity to reflect and discuss, online in their networks or in the school based within the classroom context.

As I have found with over twenty years of research in this field of pedagogical transformation for the effective use of educational technologies, the key principles for professional development which we have shifted away from now need to return: that is, to be disruptive with critiques and constructive in our collaborative discourse; examine what drives pedagogies, what sits behind the online teaching practices within the context of praxis. These key ideas can be contextualised to suit new and different learning events. Pedagogical beliefs are hard to shift but can be shifted. It is only then that change can happen, and we need change.

**Data availability**

No data are associated with this article.

**References**


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