Damian Maher

University of Technology, Sydney.

address: 5 Broadway, Ultimo NSW 2007, Australia

email: damian.maher@uts.edu.au

orchid: 0000-0002-3566-0805

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In-service teacher professional learning in Australia: Lessons learnt from COVID-19

Abstract

Professional Learning (PL) for Australian teachers is a crucial and integral aspect of their practice and is mandated under Australian legislation. This article briefly describes PL in Australia, then outlines the importance of teacher PL setting out ways it can be undertaken in different jurisdictions around Australia. The focus then moves to discussion on ways in which PL was impacted during 2020-2021 as result of COVID-19. In particular, online PL is examined indicating that for teachers in Australia, the move to online teaching and PL was sudden and was something they were not prepared for. Possible futures are explored with potential changes to the implementation of PL incorporating online and face-to-face modes. Aspects of formal and informal learning are considered accordingly. In focusing on informal learning, the way that social media supported PL during COVID-19 is examined. The potential changing focus of PL as a result of COVID-19 is investigated with a focus on online safety, wellbeing (which includes suicide), and hybrid learning. The discussion on wellbeing indicates a need for increased teacher PL with increased student concerns being reported as a result of COVID-19. Much of the content is viewed through an Australian lens although this was not always possible given a scarcity of Australian research in some areas.

Keywords: Professional learning, COVID-19, wellbeing, online safety.

Introduction

Teachers play an indispensable part in supporting student learning in the classroom. Darling-Hammond (2000) for example, noted that the effects of quality teaching on student outcomes are greater than those that arise from students' backgrounds with the effects of poor quality teaching identified as debilitating and cumulative regarding student outcomes. Such teacher

quality can be supported through on-going professional learning (PL) opportunities. It is therefore important that PL opportunities be provided to teachers that support their needs through times of change, such as with COVID-19.

The focus of this article is to examine PL, also known as professional development in Australia, and how it was supported during COVID-19 lockdowns and beyond. The article begins with an overview of PL examining different terms used. This is followed by discussion on the importance of PL. This leads to an examination of PL during COVID-19 and ways that this has impacted on both the roles of teachers and the PL opportunities that have been provided as a result.

The final section of the article looks toward the future examining possible changes to PL as a result of impacts from COVID-19. The first aspect to be examined focuses on the medium for conducting PL, which includes face-to-face and online methods. This is followed by a focus on the content that in-service teachers may need. One significant change that occurred during COVID-19 was an increased use of technology to support student learning (Sacks et al., n.d.). Increased online learning for students means that teachers will require greater expertise in identifying and managing issues that arise for students including cyberbullying and other safety related issues, student wellbeing, and hybrid learning.

The importance of in-service teacher training in Australia

There are two main phases for teacher training in Australia. The first phase is pre-service teacher (PST) training where aspiring teachers undertake courses at universities or other accredited teacher training intuitions. Those students who have no prior formal degree would generally undertake a four-year Bachelor of Education degree. There is also the opportunity to undertake combined degrees such as Bachelor of Music/Bachelor of Education, for example.

Those who already have a degree can undertake a master's degree which typically lasts for two years. There are other pathways such as the 'Teach for Australia' program, which consists of 13 weeks of training followed by a two-year contract in a regional or low socioeconomic school (Tornos, n.d.). Once these PSTs successfully complete their degree, they are provisionally registered or accredited as a teacher.

The second phase of teacher training begins after this initial teacher degree is completed and varies depending on the Australian state or territory in which the teacher resides. In Australia, there are four levels of accreditation for teachers. These are Graduate, Proficient, Highly Accomplished, and Lead. Typically, provisionally accredited teachers at the Graduate level (in the final year of an accredited undergraduate or graduate entry teaching degree), teachers are required to provide university transcripts to the registration authority of which there are nine. Teachers in Victoria, Tasmania, and the Government and Catholic systems in Western Australia are encouraged to contact their employers.

After graduation, continual in-service education is required for teachers to maintain accreditation or to move to the next level throughout their career and is different for the different certifying bodies. In New South Wales (NSW) for example, 100 hours of PD over five years is required to maintain certification at a proficient level. To move to a Highly Accomplished and Lead level, teachers should: provide a maximum of 35 items (under the headings learning and teaching programs, classroom observations, reflection and feedback, student assessment and learning, collaboration and communication, professional learning) and/or sets of annotated documentary evidence, provide 3–8 referee statements, be assessed via a site visit from an external assessor, and provide a Lead Initiative statement (if applying for Lead Teacher).

This mandated PL was developed in recognition the importance of on-going PL, much like in other professions, such as medical doctors or dentists. The framework for supporting teacher preparation and ongoing PL was developed in 1999 and was called the National Goals for Schooling in the 21st Century (the Adelaide Declaration). It is updated and renamed every 10 years. Currently it is called the Alice Springs (Mparntwe) Declaration. It was adopted by the Ministerial Council on Education, Employment Training and Youth Affairs (MCEETYA). As a critical step towards achieving the national goals, MCEETYA established the Teacher Quality and Educational Leadership Taskforce (TQELT) in July 2001. The National Framework for Professional Standards for Teaching was formulated and then endorsed in 2003.

Until this legal requirement was introduced it was possible for teachers to work indefinitely without developing or updating their knowledge. It is important that PD of teachers operates as a long-term process of growth facilitated through regular opportunities to promote learning

(Villegas-Reimers, 2003). Additionally, given the rapidly changing face of education in schools, well-designed teacher development has the potential to upgrade the professional knowledge of teachers in the workforce (Ingvarson et al., 2005). Teachers themselves value the PD with changes in knowledge, skills and classroom practice being positively associated with features of high-quality teacher development (Reid & Kleinhenz, 2015).

PL during COVID-19

In 2020, schools in many countries, including Australia, went into partial or full lockdown for varying periods of time (WHO, 2020). Because of this lockdown, many schoolteachers adopted Emergency Remote Teaching (ERT), which is very different from online teaching. As Hodges et al. (2020) explain: "Well-planned online learning experiences are meaningfully different from courses offered online in response to a crisis or disaster". An example is where teachers have to redesign the curriculum to be purely online, rather than as part of a blended approach that would normally be the case.

As COVID-19 impacted education in Australia, much of the teacher PL went online apart from individual schools running their own PL for the teachers in the school, with social distancing rules being applied. One purpose of online PL was to support teachers to teach online. As noted by the Deputy Principal at a New South Wales (NSW) school: "The need to respond to unprecedented times has resulted in unprecedented acceleration of professional growth and development for Australian teachers, especially in terms of how we have embraced digital technologies as a core driver of student learning" (Majsay, 2020).

The move to online PL emerged as a result of the rules put into place in parts of Australia, which included restricting movement, social distance rules of one person per four metres and the use of face masks. These changes sent much of the PL online. Whilst this was a rapid change for many teachers, given Australia's vast spaces, this was not typically a new experience for many rural teachers. These teachers in rural and remote areas have conducted part of their PL online for many years given the difficulty in reaching towns or cities where PL seminars operate. An example of remoteness is Arlparra school, which is located in Utopia (population approximately 450 people), 250 kilometres northeast of Alice Springs. This school is located geographically approximately in the centre of Australia. For teachers at this school to undertake PL in a face-to-face setting they would need to travel the 250 kilometres just to get to Alice Springs, which has a population of approximately 25,000

people. In a study conducted by the author, where rural teachers' mathematical knowledge was supported using video, it was found that for these teachers, travel was an obstacle. Additionally, cost in time for the teachers and cost for the school having to replace the teacher absent for PL were also problematic (Maher & Prescott, 2017). Given such costs, schools and teachers in rural and remote setting have attended both PL sessions face-to-face and online for a number of years.

Whilst teachers in remote areas may be experienced in undertaking online PL, they are inexperienced in delivering lessons to students using an online medium. This is also a challenge for teachers in urban areas. A literature review conducted by the Australian Council for Educational Research examined the issue impacts of COVID-19 from an Australian remote education perspective (Dabrowski, 2020). In their report the authors cite a recent survey of 10,000 Australian teachers conducted during April 2020 (Wilson et al., 2020). The findings of the survey show that only 30 per cent of Australian teachers had been trained to deliver online learning prior to the crisis, and the majority felt unprepared for the transition.

During lockdown, other surveys were conducted with schoolteachers and leaders to understand the impacts of COVID-19. In one survey, 79 Australian and New Zealand school principals and vice-principals were asked about their top concerns (Flack et al., 2020). Providing adequate PL for their staff was the lowest concern. This is in contrast to the highest concern, which was meeting the needs of all students. These two responses are somewhat contradictory given that schools in Australia and New Zealand went completely online around May of 2020. Given this move to online learning, many teachers would have needed extra PL to help them move to an online space as highlighted in the survey undertaken by Wilson et al. At a time when teachers needed it most, PL fell by the wayside as a result of other priorities, such as addressing the needs of students.

PL to support teachers' understanding of working in an online environment was not always provided as other survey data indicate. For example, in a large-scale national survey that investigated the impact of COVID-19 on education with 850 Australian teachers, at least half of the teachers agreed (to different extents) that they have been given professional development (50.4%), extra time (77.2%) and curriculum development support (68.1%) during this period. Approximately half of the teachers (50.4%) somewhat agreed, agreed, or

strongly agreed that they had been provided with PD as they moved to remote teaching (Ziebell et al., 2020).

There were a number of online resources available to support teachers' PL during the pandemic. The Organisation for Economic Co-operation and Development (OECD) for example, published an annotated resource list for online learning during the COVID-19 pandemic (Reimers et al., 2020). These resources were sorted into three categories, comprising cognitive skills, interpersonal skills, and intrapersonal skills. There were many online resources published around the world during the pandemic teachers could access, regardless of location.

Australian organisations also produced resources to support teachers' PL. One example is the Australian Institute for Teaching and School Leadership (AITSL, 2020), which produced a website for teachers outlining approaches that worked for online/distance teaching and learning to support them during COVID-19. The website also provided resources. For the first resource, guidance was provided from the different Australian states and territories about student learning at home. Information was provided on the importance of teacher presence in online learning and in creating a supportive online community for collaborative learning. The next resource was based on general guidance for teachers on online/distance teaching and suggested online content. A third resource included guidance for parents and carers on student wellbeing.

Informal PL- social media
As well as formal opportunities for PL, either through schools or professional organisations, there were informal networks that were able to provide PL opportunities for teachers during COVID-19. These sessions offer autonomous, self-directed, and flexible strategies that encourage teacher discussion and reflection, allow them to test new strategies, and work with colleagues on targeted projects (Aubusson et al., 2009). In addition to online sessions being conducted, informal online sites are able to support teachers' PL through the use of social network services (e.g., Facebook), microblogging tools like Twitter, and content curation tools like Pinterest (Kearney & Maher, 2019).

Research in education and other fields has shown that social media has been used during times of crisis to seek information (Payne et al., 2018) indicating that social media play a role

in modern crisis communication. Twitter, for example, can be a useful tool for spreading important information in timely manner (Panagiotopoulos et al., 2016). A United States study conducted during COVID-19 on the use of Twitter in an educational context found that in the early stages of the pandemic tweets were focused on three themes- announcements, community oriented, or unrelated. "Announcements were more common during the early stages of the pandemic (and were engaged with more collaboratively), with community-building posts more common later on" (Michela et al., 2021, p. 1)

Social media tools were not just used for PL during the pandemic; they were also used by teachers as "affinity spaces to build collective knowledge, find emotional support, and develop their distance pedagogies" (Trust et al., 2020, p. 152). Twitter was a popular tool used by teachers during the pandemic for support. It is suggested by Daly et al. (2019) that Twitter and other social media tools are having profound impacts as organizational, communication, community-building, and sharing tools.

One example of community building can be seen in a tweet shared by Eddie Woo, a well-known Australian maths teacher and education ambassador. A tweet he posted on April 26, 2020, read:

> To all my colleagues in schools across NSW: admin staff, cleaners, learning support officers, exec & classroom teachers. As we head into a Term 2 unlike any other, remember - your work, effort & time are meaningful. They matter. Our students matter. You matter.

This social use of Twitter is reinforced by results of one study, where analysis of tweets indicated that hashtags served as spaces for meeting educators' cognitive, social, and affective needs. It is important to note that PL, like all educating, is more than simply meeting cognitive needs (Trust, et al., 2020). In another analysis of educators' tweets during the pandemic, it was found that influential K-12 teacher tweets shared free advice and resources, critiqued the transition to online learning, and critiqued the actions of political leaders (Harron & Liu, 2020). These examples demonstrate that PL is not bound by state borders and that teachers can reach out to a large community online.

PL after lockdown: possible futures

It is early September 2021 as this article is being written. In Sydney, restrictions have been put in place as there are COVID-19 outbreaks in the community and some cannot be traced, which is affecting students' ability to physically attend schools and for teachers to attend PL sessions in person. The short-term situation is that these restrictions are likely to continue until the majority of the population has been vaccinated. This was similar to many OECD countries, "where primary and secondary schools are fully open in less than 40% of the 33 countries with comparable data, 'fully open' meaning that schools are open for at least the vast majority of students" (OECD, 2021, p.7).

Media for conducting PL

Generally, the situation in 2021 in Australia is that PL can now be run face-to-face and online depending on the state or territory. Travel is possible within Australia (although this varies across states and territories), while the international borders remain tightly regulated. There are also lockdowns in different states, territories, or local government areas when COVID-19 cases emerge. These lockdowns can mean interstate travellers become stranded in other states/territories, which can impact on teachers' willingness and ability to travel.

One possible future in the short-term at least, is that PL will largely remain online because of COVID-19 restrictions. Another possible future, and the most likely in the medium to long-term, is that PL will return to its pre-COVID-19 status, where there will be both face-to-face meetings on online meetings based on teacher preferences.

Studies have been conducted comparing online to face-to-face PL with results showing there are limited differences between the two modes in terms of effectiveness and leaning outcomes for teachers (e.g., Binmohsen & Abrahams, 2020; Fishman et al., 2013). Whilst the learning outcomes may be similar, teachers can have other reasons for preferring to attend online or face-to-face sessions. There is literature suggesting that teachers prefer face-to-face meetings over virtual meetings (e.g., McConnell et al., 2013). Reasons that teachers may prefer face-to-face PL include access to resources that they may not have in schools and networking with colleagues in the same subject area as them. This networking is particularly important in remote or small school where one may be the only teacher teaching a subject. Reasons teachers prefer online meetings is that they provide access to expertise and guidance on curriculum issues (Sentance & Humphreys, 2015).

The move back to face-to-face meetings may take some time as there has been speculation by many commentators that COVID-19 will impact travel for years (e.g., Gradek, 2020). Issues such as travel bubbles and limited seating on planes were some reasons cited by Gradek for ongoing impacts to travel. It may be that in-school face-to-face meetings return more quickly where teachers in the same school meet.

Whilst online platforms like Zoom do support PL, they do have limitations, social interactions being among them. Brown (2017), for example, in focusing on learning amongst students, discussed that learning face-to-face presents students with the opportunity to meet and interact with people from different locations on a personal level. This is similarly the case for teachers. An important aspect of face-to-face PL for teachers is the opportunity for teacher participants to share ideas and resources during breaks, which is not as readily possible in online learning.

Regardless of the changing circumstances, there is an increasing move towards online, blended learning, and hybrid learning, so in-service teachers need to be trained in this aspect. Philipsen et al. (2019) conducted a meta-analysis looking at teacher PD for online and blended learning and discerned six categories in need of consideration in supporting teachers' shift to the digital comprising "support and feedback from learning technologists, financial sustainability, program goals and procedures, changes in teachers' skills and attitudes, relevance and evaluation of the TPD program, and support among institutional leadership" (Heap et al., 2020, p. 35).

A change of focus for PL
Along with the change to delivery, another impact of COVID-19 is that the focus of PL is likely to change, at least in the short-term. The following section investigates three areas likely to undergo change, including online safety, wellbeing, and hybrid learning.

Online safety (cyberbullying, unwanted contact, sexting)
One big change that occurred during COVID-19 was that in many schools particularly in the developed world, learning operated online for varying periods, depending on the location, as students were put into varying forms of quarantine. This meant that students spent a great deal more time online, both for school-related purposes and personal purposes. "The increased use of online spaces for play, recreation and education during the pandemic has

raised key issues relating to the increase in opportunities for children to experience exploitation" (Archbold et al., 2021, p. 26). There can be a number of negative outcomes for young people when they are online more frequently, which includes sexting (the exchange of sexually explicit image between individuals via phones), cyberbullying, unwanted contact, and unwanted content (eSafety Commissioner, n.d., a), to name a few issues.

In Australia, the aspect of safety is being taken seriously and both federal and state governments have committed substantial financial resources to help children and young people stay safe online (Thompson, 2021). In 2008, the Government committed almost 126 USD million over four years towards a national cybersafety plan (Australian Communications and Media Authority [ACMA], 2008). Funding of 10 USD million was allocated in the 2014–2015 budget by the Australian Federal Government to maintain national cybersafety frameworks (Swan, 2015). In 2018, the Government pledged 14.2 USD million over four years for continued development of cybersafety measures (Ollitt, 2018). The figures provided here represent a moderate amount of money to invest in these programs.

The year 2020 saw a rise of requests for help by teenagers aged from 13 to 18 years old who reported problems regarding sexting and cyberbullying. Online searches on these issues increased by 55 per cent and 39 per cent respectively from 2019 through to the COVID-19 period to the National Counselling Service Kids Helpline (O'Flaherty, 2021). These searches were the highest recorded since 2000. These issues require Australian teachers to provide lessons so that students can be equipped with skills and knowledge to help identify when they may be in trouble and act accordingly. Increased occurrences of safety-related issues by students also require that teachers are provided with PL to help them identify issues and then be able to refer students to support services if needed.

At the time of writing this article, the Australian eSafety Commissioner (n.d. b). was conducting a series of modules for teachers to support their PL on the aspect of online safety. One module includes online harmful sexual behaviours, misinformation, and emerging technologies, which provides evidence-based, targeted advice about online harmful sexual behaviours, misinformation, and emerging technologies. Another module relates to risks and protective factors. A further module concerns online safety for school leaders. The first two modules can be counted by teachers towards their PL accreditation. These modules are supported by online resources for use in the classroom. According to Archbold et al. (2021),

in the future, the materials and information provided by the eSafety Commissioner could include "further staff training within schools about privacy and data protection, dedicated privacy officers within schools and a coordinated agency to assess what technology is necessary and appropriate in the educational context" (p. 27).

Wellbeing

One of the aspects that has impacted student learning, requiring a stronger focus on PL, is student wellbeing. The figures presented in this section suggest that issues related to wellbeing including suicide amongst Australian students are increasing and that more resources and support will be needed by schools to try to address this increasing rate.

The concept of wellbeing can be challenging to describe and explain definitively in research and practice in education as well as other fields (Vernon, 2008). The Melbourne Declaration characterises wellbeing in terms of its intellectual, physical, social, emotional, moral, spiritual, and aesthetic dimensions as set out by the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA, 2008). According to Roffey (2012), teachers bear the burden of youth mental health, of which wellbeing is a large part.

One issue that emerged during COVID-19 lockdown and moving completely to an online environment was negative effects on school students' wellbeing. For example, in an Australian study conducted with 1200 primary and secondary teachers, it was reported that 75 percent of the primary and secondary schoolteachers surveyed believed remote learning would negatively affect students' emotional wellbeing to some degree. "This would manifest in forms such as anxiety (including obsessive-compulsive disorder related to personal cleanliness), feelings of disconnection, withdrawal from interacting with others, and missing friends" (Ziebell, et al., 2020, p. 7). The impact on wellbeing was observed by many other Australian researchers such as Brown et al. (2020) who found that:

> Nearly half the national school student population is at risk of having their learning and wellbeing significantly compromised by not being at school because they are in a vulnerable group, due to their young age; social disadvantage; specific needs; or family employment context. (p. 1)

Another big issue that affects the wellbeing of young Australians is suicide, and it is the leading cause of death among young people aged 15–24 (Malhi & Bell, 2020). The rate of

suicide is increasing as a result of COVID-19, and this is requiring a stronger focus through PL opportunities for teachers. According to the Australian Institute of Health and Welfare (AIHW, 2020) in 2018, 3,046 deaths by suicide were registered in Australia, an average of about 8 deaths per day. Disturbingly, the suicide rate is increasing. Although the number of deaths by suicide varies each year, the age-standardised suicide rate in Australia has increased from 10.7 per 100,000 population in 2009 to 12.1 deaths per 100,000 population in 2018—a 13% increase.

In May 2020, the Australian Medical Association (AMA) and Australian leading medical experts put out a joint statement that the COVID-19 impact was likely to lead to increased rates of suicide and mental illness (AMA, 2020). The AMA did warn that suicide rates could increase as the effects of the pandemic on employment take hold, particularly for young people living in rural regions and that the higher rates could persist for up to five years. As part of the social support teachers provide, it is important that they are trained to identify students who may be exhibiting suicidal tendances and provide pastoral care, as well as having the training to connect students to appropriate support services. Additionally, teachers require a sound understanding of the important contribution skills to learning and wellbeing, and the capacity to confidently and skilfully engage in developing students' emotional competencies (Freeman & Strong, 2017). It is through PL that these skills can be developed.

As the lockdown continued, it became clear that COVID-19 was impacting on the wellbeing of young people, which was contributing to increased attempted suicide rates. The number of attempted suicides increased sharply for young people in Victoria, the state most affected by lockdowns, during December 2020 through to May 2021. Data from Kids Helpline (an Australian online support service) reveal that there was a 184 % increase during the six months reported. Teenagers aged 13-18 were most at risk accounting for 75% of interventions (Wootton & Mizen, 2021). As stated by AIHW, some key risk factors associated with deaths by suicide have worsened since the onset of COVID-19 such as loneliness. Factors for young people also included loss of jobs for parents, loss of financial support, and illness or death for family and friends due to COVID-19.

The Australian Council for Educational Research conducted a literature review examining student wellbeing and teacher involvement. A finding of this review was that:

Evidence suggests that wellbeing programs delivered by 'trained' classroom teachers (e.g., a program designed to build the capacity of the teacher first, supported by resources for students) were marginally more effective in impacting students' wellbeing outcomes than programs delivered by external professionals. (Dix et al., 2020)

The authors highlighted the importance of teacher PL in influencing student wellbeing. A framework that can be used to support the wellbeing of young people in schools is called the Australian Student Wellbeing Framework, which was launched in 2018 and is produced by Education Services Australia. The framework supports "principals, school leaders, teachers, and students and their families to build a positive and inclusive learning environment through explicit teaching, evidence informed practices and active participation of the whole school community" (Education Services Australia, n.d., p. 3). There are five elements to this framework: leadership, inclusion, support, student voice, and partnerships. One of the important aspects is that students are active participants in their own wellbeing and can give them agency in this area. It is important that teachers undergo PL to help them understand and use frameworks such as this and how to work with different groups in order to successfully help young people manage their wellbeing. A number school programs have stemmed from the framework including Be You (Beyond Blue, 2020), Bullying. No Way! (Safe and Supportive School Communities, 2020), and the Safe Schools Coalition (The Foundation for Young Australians, 2020) (Henderson et al., 2020).

Beyond Blue, an organisation that supports wellbeing across all age groups, launched a mental health initiative in schools in 2018 called Be You (Beyond Blue, 2018) funded by the Australian Government. This program offers PL to teachers and is freely available to all 24,000 early learning services, primary and secondary schools throughout Australia. "Be You draws on professional learning principles designed to build capacity in educators and educational systems relating to mental health promotion" (Hoare et al., 2020, p. 1061). Analysis by Beyond Blue (n.d.) demonstrates that teachers using the resources feel more confident in supporting a young person with a mental health condition. In order for teachers to use the resources effectively it is important they are provided with PL opportunities.

Programs are also run by Education Departments at a state or territory level. One such program being run by the Victorian Department of Education and Training (DET) helps

students learn the competencies and skills they need to build resilience and effectively manage their emotions, behaviour, and relationships with others. The program aims to develop teachers' expertise and practice in promoting social and emotional wellbeing (DET, n.d.) by building teacher capacity as well as providing programs and resources.

Given the predicted rise in suicide amongst secondary school students, it is important that schools start to invest more resources into supporting young people, including that teachers are provided with on-going PL. Focused PL would help teachers identify students with suicidal tendencies in the early stages and allow the teachers to both support the students in classes as well and link them referral services. It is important that PL provided to teachers is suited to the needs of the students and the broader community in which the school is situated.

Hybrid learning

COVID-19 has, and will continue to, transform teachers' pedagogical practices (Cottingham et al., 2020). A result of this transformation is that teaching and learning modes may become more hybridized. This model is where synchronous sessions are run with some participants present in a face-to-face mode and some participants present in an online mode. This differs from a blended learning model. Whitelock and Jelfs (2003) define blended learning as the integrated combination of traditional learning with web-based online approaches. Using a hybrid model, it is either online or face-to-face at the one moment in time. Hybridity provides opportunities for empowering teachers and students to collaboratively define and redefine what it means to teach and learn through processes of hybridization (O'Byrne & Pytash, 2015).

Given this potential increased move to hybridized teaching and learning, it is important that teachers understand how to engage productively in hybrid learning models. It is therefore vital that there are opportunities for teachers to enhance their ability to collaborate and deliver hybrid instruction (Wojcikiewicz & Darling-Hammond, 2020). There are a number of challenges for teachers in delivering hybrid lessons, such as engagement with resources and opportunities for collaboration so developing skills around these areas is important. There are numerous factors that need to be considered when adopting a hybrid model. One of the most important systems in the classroom in a hybrid model is the sound system (Triyason et al, 2020). Other aspects include the ability for participants to chat, video, file sharing and

breakout rooms. It is important that teachers not only be trained in how to facilitate hybrid lessons, but they also have the proper equipment to conduct effective lessons.

Final remarks

This article has examined in-service teacher PL focusing on conditions during the pandemic and beyond from an Australian viewpoint. Whilst every effort was made to draw on literature from Australia, sometimes this was not possible as there was limited literature in the field. In the first part of this chapter, the importance of PL in Australia was outlined and pathways for teachers to progress throughout their career in NSW was outlined. In investigating PL, it was found that generally teachers were unprepared in moving completely online to support teaching and learning during COVID-19, where many changes were enacted.

To support teachers, numerous resources were made available in a relatively short period of time. In focusing on PL opportunities there were both formal and informal opportunities for teachers. One informal opportunity was social media which provided more than content knowledge for teachers allowing teachers across the globe to share ideas and strategies. Such global sharing is important given that COVID-19 has affected many countries around the world and similar strategies and ideas can be adopted to local conditions.

In concluding this article, several possible futures were presented. The possible futures suggested here were based on the content that teachers might need to know in the short term at least and include knowledge on cyber safety and knowledge on supporting students' wellbeing, which included suicide. As was noted, these aspects that were already of concern in Australia before COVID-19. These aspects have been further exasperated as result of COVID-19 and will require additional PL for teachers to support students for a number of years to come.

A third possible future focused on teacher's knowledge in working in a hybrid environment. This aspect examined changes to the medium that teachers may be using in the future and how they will be supported for this via PL, both pedagogically and with resources. There are many other possible areas that may change in the future that have not been covered here. It is clear the challenges COVID-19 has brought will continue for some time and that on-going support for teachers will continue to be a priority.

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