Reflecting on Diversity through a Simulated Practicum Classroom: A Case of International Students

Mark Finn
Sivanes Phillipson
Wendy Goff
Swinburne University of Technology, Australia

ABSTRACT

This study aimed to investigate how international students draw on their own cultural identity to reflect on their teaching practice in a simulated classroom in the Australian context. Each simulated teaching session that the students participated in was recorded and sent to the pre-service teachers for later review and reflection. The pre-service teachers were required to produce a 1000 word written reflection of their teaching practice with an explicit focus on how they supported culture, difference and diversity of need in their lesson. Using the Rodger's framework, these reflections were analyzed using the Leximancer software, a lexical semantic tool, to identify the shared and unique experiences that pre-service teachers from the diverse backgrounds face in refining and developing their teaching practice. By highlighting such similarity and difference, it is anticipated that higher education institutions will be in an informed position with regard to the impact of cultural background to teaching practice especially in relation to international pre-service teachers.

Keywords: culture, diversity, pre-service teachers, reflect, simulated practicum.

Changes to migration patterns combined with continued growth in the market for international education mean that the Australian classroom environment of today is more diverse than ever before, both in terms of students and their teachers. This means that a recognition of cultural diversity and the challenges and opportunities it presents must be part of pre-service teacher training. This paper focuses on an innovative

approach to supporting diversity and inclusivity in teacher education, using computer-simulated classroom environments and reflective practice. The study aimed to investigate the extent of how pre-service teachers' diverse backgrounds affect their reflections of their interactions within this simulated context, using Rodgers' principles as the analytic framework.

This paper begins with a comprehensive review of the literature on approaches to diversity especially in light of current educational practices. This review is meant to reveal not only existing practices in school teaching but also the advantages and challenges that the diversity of international students brings to current classroom pedagogy.

APPROACHES TO DIVERSITY

The topic of cultural diversity in the classroom has, not surprisingly, been the subject of tremendous academic interest, with scholars identifying a range of both opportunities and challenges (Hattie, 2009). A scrutiny of recent literature on the topic reveals several key themes that frequently appear.

The first of these themes relates to the effect that diversity has on education. Even though most researchers agree that increased levels of diversity among students and staff has a positive effect on the experience of education, there are differing views on how that effect presents. For example, a 2001 study of American high schools found that increased levels of diversity produced an identifiable increase in academic performance (Terenzini et al., 2001). This finding was supported by a 2010 PISA-based study, which identified a clear educational advantage to having a diverse student cohort, as reflected in standardized test results (Konan et al., 2010). More recently, a 2019 German study found that academic performance improved with increased levels of diversity, although in this case the improvement was also tied to psychosocial factors such as feelings of belonging to the school community (Schachner et al., 2019).

Though much of the literature focused on the benefits of cultural diversity in the classroom, there are many researchers who focused on the challenges associated with implementing diversity-orientated strategies. As Harris and Alexander (1998) noted:

> Policy and reform initiatives, such as detracking and inclusion, have also increased classroom diversity. Students who face significant challenges and difficulties in the classroom—due to social inequities or inequalities, language challenges, disabilities or other factors— may in fact require more extensive, scaffolded, and explicit instruction to develop skills, processes, and understandings that other students learn more easily. (p. 122)

Language competence is seen to be one of the most challenging elements of a culturally diverse classroom. For example, Hammond (2001) found that Australian students from non-English speaking backgrounds consistently underperformed on assessment that was designed for native English speakers, a finding that was also found by Cheng et. al. (2007) in Canadian classrooms. These challenges are often exacerbated by the anxiety many students experience when working with unfamiliar

language, which leads to what Lou and Noels (2020) have termed a vicious cycle. Indeed Cousik (2015), found that issues around language competency tended to compound other issues that students might face, such as learning disabilities. From a policy perspective, many schools struggle with the tension between assessing students in a dominant language while simultaneously recognizing the importance of their native language abilities (Janmaat, 2012). Importantly, language competency has also been recognized as a challenge for pre-service teachers, especially in the context of a practicum experience (Gan, 2013).

Several studies have sought to explore how the attitudes of teachers relate to broader community beliefs about ethnicity and multiculturalism. Horenczyk and Tatar (2002), for example, have looked at how the attitudes of Israeli teachers have been impacted by broader debates around refugees in the region. Similarly, Forrest et al., (2016) investigated the attitudes of teachers toward cultural diversity in Sydney, Australia. The authors found that there was a complex interaction between teacher attitudes and the beliefs of the wider community in which they worked. Studies such as these make an important contribution to understanding the dynamics of teaching in a culturally diverse environment in that they firmly situate the practice of teaching within its broader societal context.

Given the importance of attitudes to teaching effectively in a culturally diverse context, it is not surprising that a significant amount of the literature in this area is focused around pre-service teacher education. Many teacher education courses now feature elements specifically designed to increase students' capacity to manage diversity in the classroom. Whilst most agree with the value of these initiatives, some have questioned their ongoing impact (Weisman & Garza, 2002). Bryan and Atwater (2002) noted that many teachers graduate from teacher education programs with a worldview that remains situated in their own social and cultural backgrounds. These authors argued that experience of a diverse classroom environment should form a key component of all teacher training program, with others such as Chou (2007) suggesting models such as professional developments schools might offer a possible solution. However, Gay (2010) took this debate a step further to argue that even when pre-service teachers are explicitly introduced to issues of diversity in the classroom there is often some measure of resistance, based on pre-existing beliefs around culture and race. The kind of reflective practice explored in this paper has the potential to alleviate many of these concerns.

Finally, and most importantly in terms of the focus of this paper, there is a body of literature that explores how the cultural background of the teachers themselves affect their teaching strategies. Wulandari (2019), for example, argues that "teachers cannot be separated from their cultural background" (p.49), noting that a teacher's cultural background is likely to affect the way they think, their classroom behaviour, their value systems and their attitudes toward traditions and beliefs. Previously, Dickar (2008) found that American teachers from ethnic minorities had a better understanding of the issues facing students from diverse cultural backgrounds. This finding is even more pertinent when compared to practices of other teachers who predominantly engaged in a variety of strategies that worked to de-emphasize issues of diversity. This finding is supported by similar research in New Zealand, which found that having an ethnically diverse teaching staff benefitted all students, not just those from minority backgrounds. Of particular importance here was the role of

teachers from ethnically diverse backgrounds in preparing students for an increasingly multicultural workforce and society (Howard, 2010, p.6).

In a similar vein, there has been research on how diversity impacts on the implementation of educational curriculum. Khine and Fisher (2004) argued that a teacher's cultural background does not just affect the way they handle diversity in the classroom, but actually impacts the way the curriculum is presented. Drawing on earlier cross-cultural comparisons, the authors argued that there are distinct differences in the pedagogical approaches taken by teachers from Western and Asian backgrounds, and these differences were clearly perceived by the students in their classes. These differences were apparent in a number of different dimensions including the extent to which the teacher was willing to help students with their work, the extent to which classroom activities were task orientated and the extent to which all students were treated equally (Khine & Fisher, 2001). More recently, Phillipson and Phillipson (2020) in their study of 37 expert teachers from Australia, Finland, Hong Kong and the United States noted that the cultural background of the teachers determined the way they approached and established relationships with their students from diverse backgrounds, though individual cultures had their own idiosyncrasies that made their classroom practice nuanced.

Lindsey (2004) stressed that although research pointed to a clear connection between a teacher's cultural identity and their classroom practice, this connection was not necessarily reflected on and recognized by the teachers themselves. This disjunction is where reflective practice can be beneficial as "its resonance with teaching is attributable to the fact that it encapsulates the complex, analytical and inquiring nature of teaching" (Harford & MacRuairc, 2008, p. 1885). Loughran (2010) pointed out that expert teachers are reflective and therefore are able to take risks as they learn to manoeuvre their classroom practice. In other words, reflective practice allows teachers to explore how their cultural identity and background influences their teaching practice. This idea of reflexivity, especially within an initial teacher education setting, represents the main focus of the present study. The next section explores literature on how pre-service teachers are prepared for classroom practice and a pathway to reflective practice, including the implications of this preparation for international students. International students in this study are defined as students who were born in a country other than Australia, who have completed their own schooling in their home country but who have chosen to undertake all of their tertiary education in Australia. In this study we define cultural diversity as perceived divergences from white monolingual backgrounds (Dee & Henken, 2002); cultural identity as a conscious identification and perceived membership within a specific group (Collier & Thomas, 1989); and teacher identity as a conscious identification and perceived membership within the teaching profession.

PRE-SERVICE TEACHER PREPARATION

The dichotomy of theory and practice has posed a significant challenge to higher education institutions since Initial Teacher Education (ITE) moved into the university context (Loughran & Hamilton, 2016). Traditionally, universities have been espoused as the contexts that develop theoretical knowledge, and schools have been espoused as the contexts in which initial teacher education students (pre-service teachers) gain

their practical understandings. A continuous criticism of ITE lies in the theory-practice nexus and the need for higher education institutions to *bridge-the-gap* (Allen, 2008; Darling-Hammond, 2016). According to Loughran and Hamilton (2016), the consequence of perceiving theory and practice as a dichotomy in the preparation of classroom teachers narrows thinking and leads to a view that only time in schools can develop practical understandings. This view has implications for pre-service teachers who have limited time for reflection and must shift between their student and teacher identity as they travel in and out of their two contexts. Moving beyond the dichotomy of theory and practice opens new ways of reconceptualising ITE and embracing new ways of teacher preparation.

The potential of Virtual Reality (VR) and simulated learning environments is now being realized, adopted and researched across different discipline areas of the higher education context. VR simulations have been successfully utilized in disciplines such as nursing, engineering and medicine to nurture reflection and reflective practice as well as to support the development of professional identity (Elliman, Loizides & Loizou, 2016). Despite this uptake, examining the effectiveness of VR simulated learning environments in ITE appears to remain elusive. This gap is reflected in the limited published research in ITE (McGarr, 2020), and in the traditional theory-practicum models still found in most ITE programs. In fact, in a systematic review of the use of VR simulations in ITE programs Billingsley and colleagues found a mere seven studies that reported evidence on the effectiveness of VR simulations in initial teacher preparation (Billingsley, Smith, Smith & Meritt, 2019).

Despite the limited research in the field, there is some emerging literature that has demonstrated the potential of VR simulation for teacher preparation. For example, in a study that explored the use of mixed-reality simulations prior to and within the practicum experience, Piro and O'Callaghan (2019) reported the VR simulated experience as a major contributor to shaping and developing teacher identity. A VR simulation was employed in the study to expose pre-service teachers to three levels of concepts considered critical and specific to the discipline – threshold concepts. The threshold concepts were (1) rapport building, (2) implementing organizational routines, (3) implementing norms and routines for classroom discourse and work, (4) eliciting and interpreting individual students' thinking using a graphic organizer, and (5) leading a group discussion with higher order questions. The pre-service teachers in the study participated in the planned VR simulations and then reflected on their performance relative to each threshold concept. An interesting finding from this study was that the participation in the VR simulation, followed by reflection on performance, not only developed the sense of a collaborative shared experience, but it also supported pre-service teachers to develop their individual and collective teacher identity (Piro & O'Callaghan). While this study provides valuable information about the effectiveness of the VR simulation, a limitation of this study lies in the lack of emphasis and examination of the reflective process in supporting teacher identity development.

A significant component of professional socialization is reflective practice yet Ditchburn (2015) suggests that a traditional model of ITE practicum "does not encourage PSTs [pre-service teachers] themselves to theorize about their practice, engage in pedagogical risk taking, or to assimilate critical reflective practices as a

considered and natural part of their work" (p. 94). In a study that explicitly targeted reflective practice, Ledger and Fischetti (2019) sought to identify the benefits and challenges of microteaching and VR simulations on pre-service teachers' self-efficacy in their preparation for practicum. Data were collected through observation of pre-service teachers teaching in the VR simulated environment, researcher engagement with literature, and a pre-simulation and post-placement questionnaire that was focused on capturing ITE reflections on preparedness. Participation in microteaching in a VR simulated environment was found to reinforce the importance of reflective practice by offering a preparatory tool for pre-service teachers to engage in the process, and by providing ITE lecturers with a potential diagnostic tool for early identification of the specific needs of pre-service teachers (Ledger & Fischetti, 2019). This is an important consideration for ITE, particularly in relation to the support of international students who are already having to adjust both psychologically and socio-culturally to the nuances of the Australian education system (Barton, Hartwig & Cain, 2015).

This current study adds to this emerging field of research by examining how a formal reflective task coupled with participation in a VR simulation can support international students' development of their teacher identity. Of specific interest was how international students' existing cultural identity was drawn on when reflecting on their teaching experience. In order to analyze this, we employed Rodgers' (2002) four functions of reflection as an analytical framework.

METHOD

A small-scale study that was conducted as part of a larger project that aimed to evaluate the effectiveness of a VR simulation to prepare pre-service teachers for the practicum experience is reported in this paper. The study reported in this paper is a sub-set of this wider project and focused on how international students' cultural identity is drawn on to reflect on teaching practice in a VR simulated classroom. The research question under investigation was: *How do international students enrolled in an initial teacher education course draw on their cultural identity to reflect on their teaching practice?*

The vehicle used to facilitate the online simulated classroom experience was a low-immersion virtual reality platform that draws on Mursion software to harness technology and human interaction in real-time. The VR simulation was embedded in the teacher education program of an Australian University in a third-year unit of work that examined diversity and equity in the primary/elementary school classroom. After engaging with various theoretical materials and policy documentation examining diversity and equity in a school-based context, PSTs were provided with a brief outlining the diverse needs of five school-aged students: Mina – a student with a diagnosis of ADD; Will – an extremely shy and quiet student with low self-esteem; Jayla – a happy and friendly student who has recently 'come out' publicly as homosexual; Emily – a student identified as gifted in reading and writing; and Carlos – a student with a diagnosis of ODD. PSTs were then required to plan to support these five children by developing a lesson plan that catered to diversity to teach in the VR simulated classroom. Once the lesson was planned, the PSTs were invited to share their lesson plans with the simulation specialists and book in a time to teach their

lesson in the VR simulated classroom. On the day of the simulation, the PSTs logged into the simulated classroom from home or wherever they deemed suitable, and virtually delivered their lesson.

The simulation specialists are paid actors who controlled the actions of the student avatars in real-time. As the PSTs delivered their lessons, the simulation specialists were able to adapt the different student personas and engage in interactions that were immediate and responsive, reflecting a real-world teaching experience. Each simulated teaching session was recorded, and the simulation specialist sent a copy of the recording to the PSTs for later review and reflection. The PSTs were then required to draw on the theoretical materials presented in the diversity and equity unit of work to produce a 1000 word written reflection of their teaching practice with an explicit focus on how they supported culture, difference and diversity of need in their lesson.

The PSTs whose reflections were collected for this paper provided voluntary consent for their piece of work to be analyzed after the reflections had been assessed and graded. None of the researchers were involved in the teaching of the unit of work. Figure 1 provides a visual representation of the workings of the Mursion VR simulated classroom.
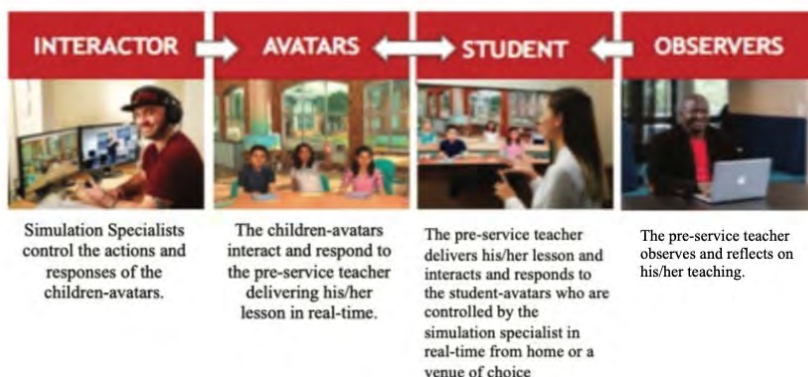

Figure 1. Components of the Mursion VR Simulated Classroom Experience (Adapted from Ledger 2017).

Sample and Data Analysis

Four third-year international PSTs' 1000 word written reflections of their teaching practice was taken as the sample data. The four third-year international PSTs in this study were all fulltime international students who had successfully completed two years of tertiary education in Australia as well as two face-to-face practicum experiences in Australian schools. PSTs who participated in the study disclosed that they were born overseas but did not disclose their country of origin. Each of the PSTs are referred to as PST1, PST2, PST3 and PST4.

Analysis of the written reflections was completed using Leximancer v4.5 with settings at default values, with the only exceptions set for the concept map explorer. The theme size was set at 53% to capture conceptually relevant themes and

the visible concepts within the themes were set at 100% to ensure that the concepts were obvious to explain the lexical semantic themes.

Leximancer is ideal as an efficient tool that replicates the manual coding procedures used in content analysis to identify the underlying core themes and associations between themes (c.f., Smith & Humphreys, 2006). Being automated, it is free from the influence of human bias and/or expectation bias from a researcher's personal knowledge during the coding process, thereby removing issues such as coder reliability and subjectivity.

In broad terms, the algorithms within Leximancer identify and rank the themes by connectedness using the summed co-occurrence with all other themes. The algorithm begins at the top of the ranking and creates a theme group upon which it is centered. It then goes to the next ranked theme and either joins the nearest theme and adjusts the centroid of that theme (only if the next theme is near enough to any other theme group centroid on the map), or it starts a new theme group (Leximancer, 2018). Leximancer also generates a thematic summary that includes a connectivity score to indicate the relative importance of the themes, with the most important theme at 100% being found at the top. The subsequent grouping of themes enables the mapping of any relationships between the concepts. Finally, Leximancer produces a visualization of the thematic groupings and their associations with each other (Leximancer, 2018; Smith & Humphreys, 2006).

RESULTS

The Leximancer concept map as seen in Figure 2 represents five themes. There are three of dominant themes – STUDENTS, IN THE CLASSROOM, and LESSON, with two smaller themes of STORY AS A TOOL and SHARE. The three dominant themes are overlapped, which emphasizes the importance of a close relationship between these three themes. On the other hand, the smaller themes are quite far away with the SHARE theme being quite an outlier in the map.
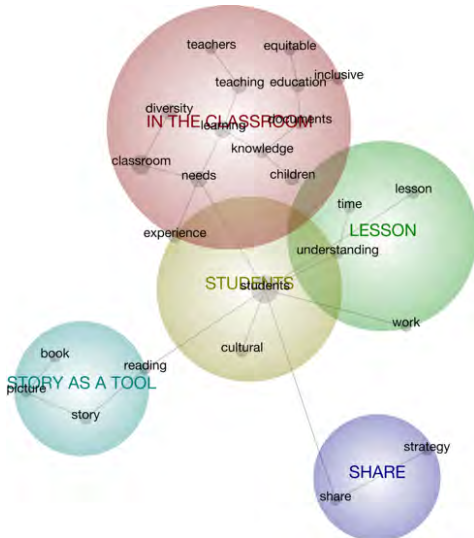

Figure 2. Leximancer concept map of four international students' reflections on their teaching practice and learning through the Mursian simulated classroom.

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The central theme is STUDENTS that has 101 verbatim hits with two concepts of *experience* and *cultural* visible in the map. The visibility of the concept of "cultural" seems to suggest that the PSTs reflected meaningfully on how they responded to their own students' diversity or cultural background. For example, PST2 mentioned how they felt that they did not sufficiently prepare for their teaching to address their students' diverse needs.

> *However, due to my inadequate preparation and lack of effective teaching and behavior management strategies, I failed to promote equity and inclusion in my classroom. From this experience, I learnt that I need to plan as well as prepare resources carefully before each lesson* – PST2

Recognizing students' cultural nuances in the classroom teaching is seen as a way of extending a good experience, displaying some vigorous thinking in their own reflection.

The concept of "experience" is mentioned repeatedly by the PSTs as a way of responding to students' cultural and diverse needs. They viewed the experience they offered to their students through their teaching as being paramount to meet diverse needs in the classroom. PST4, for example, talked about modifying their approach in using stories to teach their students:

> *There are some adjustments that should be considered to make this learning experience more successful. Firstly, while I read the story, the students seem to be not focused and not engage in the story. Additionally, while reading, I should stop at some points to ask some questions such as "Have you shared any cookies with your family members?". This would have enhanced the students' understanding about the story content, as well as provided them with an opportunity to make a connection with their own experiences and invited their families' cultural practices into the classroom* – PST4

More importantly, the PSTs acknowledged that it is vital to think and implement classroom strategies that would encourage their students to have open and honest dialogue to help students to recognize and celebrate the differences and similarities between one another. At the same time, the PSTs reflected on their own cultural background and diversity that might impact on their own teaching of the students. PST2 mentioned in their reflection that "I need to think carefully about my own diversity and how I fit in to the classroom and how I can use my experiences to support my students."

Student "experience" as a concept is also clearly overlapping with other concepts that sit within the major theme of IN THE CLASSROOM that has 80 verbatim hits. This theme is considered major as it has the most comprehensive number of linking concepts that explain the four PSTs' emphasis in their reflections. The concepts that are visible and that are interconnected with experience are *classroom* being a *learning* space that is related to building the appropriate *knowledge* base in *children* from diverse backgrounds. The PSTs specifically referred to policy *documents* and frameworks such as the Australian Professional Standards for Teachers, the VIT Code of Conduct and Ethics as well as the Australian Curriculum

as guiding principles for their *teaching* and their professional status as *teachers* – showing a connection to the teaching community. The PSTs also referred to such documents as providing them knowledge and basis on *inclusive* educational practices. For example, PST1 reflected that "Educational policy documentation gives instruction for the way in which practices should be undertaken, with the need to be supported by pedagogy that promotes inclusion and diversity in the classroom to foster an equitable learning environment". Along the same vein, PST4 mentioned in their reflection that "to consider an equity and diversity of teaching and expectations, an educator not only considers individual students' strengths and needs, but also the needs and strengths of the whole class."

The third theme is LESSON, which has a verbatim hit of 15. The smaller number of verbatim is concentrated around the concept of *lesson* planning that connects with concepts of *understanding*, *work* and *time*. The PSTs' reflections focus on how they plan their lessons taking into account students' ability to understand and learn. The PSTs clearly discuss how they work hard at engaging students into their lessons with careful planning of activities and associated activities. PST4 for example, shared that *"I applied a direct instruction approach for the body of the lesson. The students had a better understanding of the task because I broke down the steps and instructed them to do the next activity."* However, in reflecting their approaches, the PSTs also humbly noted the mistakes that they made in delivering their lessons. PST2 reflected that *"those tasks were not appropriately challenging and as a result, students lost interest and did not actively participate in the lesson."* Such humility and awareness signalled a reflective attitude that is important for the development of a teacher.

The fourth small theme is STORY AS A TOOL, a theme that shows how the PSTs reflected meaningfully on using stories as a tool. They understood that the stories are simply a means to an end and not an end in themselves. For example, PST2 mentioned that: "By not having the pictures, students could not draw on their own cultural backgrounds or family upbringings to visualize the story. If this was thought about carefully, I would have let them come into contact with the story in their own unique way."

The final and most distant theme is SHARE. The PSTs talked about two sides of sharing – sharing of their own cultural diversity with their students as a way of creating meaning and sharing between students as a strategy for learning in the classroom. For instance, PST4 mentioned that *"Coming from a cultural background where sharing food is an important part of my family, I was able to ensure that my own cultural background did not influence Carlos and that he felt safe to share his own cultural perspectives."* Whereas in their reflection, PST2 wrote how they *"planned opportunity for students to share their experiences and viewpoints with their classmates using think-pair-share strategy sharing in small groups or in pairs."*

DISCUSSION

Rodgers describes a four-phase reflective cycle that assists teachers to better understand student learning. Applying this cycle to pre-service teacher education provides a way to slow down the process of teaching and learning and support pre-service teachers to engage in extended forms of reflection and thinking (Rodgers,

2002). The incorporation of VR simulation further supports this process by providing both time and a safe space for pre-service teachers "to shift the weight of that thinking from their own teaching to their students' learning" and be present in the experience of learning about student learning (Rodgers, 2002, p.231). The pre-service teachers in this study showed a developing awareness of the cultural understandings of their own students and also in the sustained focus on student diversity. The pre-service teachers moved beyond the mechanics of teaching and towards an explicit focus on understanding the needs of students, including what students needed for effective learning. What was interesting in this study was that although pre-service teachers did not disclose their country of origin, they still drew heavily on their own cultural identity to reflect on and make sense of their teaching practice. This reflection involved identifying similarities between self and student and then providing alternative pedagogical approaches for moving forward. This suggests that the emergence of teacher identity is more than reconciling cultural identity within a new context but that it involves identifying a space in which difference can move together.

The incorporation of written reflection alongside the VR simulation proved an important resource to support pre-service teachers through the process of "telling the story of an experience" (Rodgers, 2002, p. 237). Rodgers suggested that "a prerequisite to being able to describe an experience is being able to distinguish between description (what one sees) and interpretation (ascribing meaning to what one sees)" (Rodgers, 2002, p.238). The written component embedded in the task provided pre-service teachers with a way to analyze and interpret their recorded teaching practice and reconcile their professional identity through "learning to take intelligent action" (Rogers, 2002, p. 235). This reflective piece was a crucial aspect of the pre-service teachers' learning as it shifted the onus of learning away from the lecturer and placed it squarely onto the pre-service teachers. The task also provided a way to actively engage pre-service teachers in the reflective process of theory and application.

Incorporating the practice of teaching into the university environment afforded the pre-service teachers in this study an opportunity to reflect deeply on their teaching by analyzing their experience and also their teaching practice. Being able to reflect is an important step toward the development of professional identity as it provides a safe space for pre-service teachers to experiment and perfect their craft. Having a safe space to think and connect to learning is particularly important for international students who are also learning about the Australian school context. It is a step that is elusive in the current model of school-based practicum experience and seen as paramount as a reflection of practice that connects with community needs (Rodgers, 2002).

CONCLUSION

The findings presented in this paper demonstrate that an immersive simulated teaching experience can support and enhance reflective practice among pre-service teachers. By giving the pre-service teachers an initial classroom experience within a controlled and repeatable format, it allowed the pre-service teachers to reflect on their practice in a systematic manner that echoed many of the criteria proposed by Rodgers (2002). This approach proved to be especially important for pre-service teachers from

diverse backgrounds, as it enabled them to focus specifically on the way culture intersected with pedagogy and reflect on how their own cultural position might affect their teaching. VR systems such as the Mursion platform used for this study also provides university educators with an important diagnostic tool that can help identify gaps in support and are likely to become increasingly important as the ongoing impacts of COVID-19 continue to limit traditional practicum opportunities.

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BIOGRAPHIES

Mark Finn, PhD, is a Senior Lecturer in Media and Communications. He was one of the first media scholars to explore the evolution of the World Wide Web as an emerging form of media, and has also published widely on various aspects of media evolution, including the historical development of electronic commerce and the social implications of mobile computing technologies. For the past seven years he has been specialising in growth and implications of computer games, and has published widely on the *Grand Theft Auto* series. His current work focuses mediatisation theory and explores the deepening impact media is having on a range of social institutions and relations. Email: mfinn@swin.edu.au

Sivanes Phillipson, PhD, is Swinburne University's Dean International and Professor of Education. She is also the Routledge Editor for Evolving Families Series, a series that focuses on issues, challenges and empirical best practices surrounding evolving families that impact upon their survival, development and outcomes. Sivanes' research interest and experience centres around teaching practices and

parental engagement in early learning and care as the basis for children's formal learning and whole wellbeing. Her most recent work from an ARC Linkage is a resource website, www.numeracyathome.com that facilitates and enables parents and educators to engage in early mathematical learning. Her previous work includes the Australian Scholarship Groups Australia and New Zealand Parent Report Card project 2015-2017. The 2017 report has had extensive media outreach across the nation both in Australia and New Zealand. Email: sphillipson@swin.edu.au

Wendy Goff, PhD, has worked closely with schools to develop a variety of intervention and support programs targeting the educational and social welfare needs of children and families. Her research focuses on adult relationships. She is particularly interested in how adults might come together to support the learning and development of children. Throughout her career, Wendy has worked as a pre-school teacher, a primary school teacher, and a social welfare worker. She joined the tertiary setting in 2010 and teaches in the secondary, primary and early childhood teacher education programs. Email: wgoff@swin.edu.au