

2014

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Recommended Citation

McMahon, J. A., & Dinan Thompson, M. (2014). Health and Physical Education and the Online Tertiary Environment at Two Universities: Pre-service Teachers' Perceived 'Readiness' to Teach HPE. *Australian Journal of Teacher Education*, 39(3). Retrieved from <http://ro.ecu.edu.au/ajte/vol39/iss3/6>

This Journal Article is posted at Research Online.
<http://ro.ecu.edu.au/ajte/vol39/iss3/6>

Health and Physical Education and the Online Tertiary Environment at Two Universities: Pre-service Teachers' Perceived 'Readiness' to Teach HPE

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Abstract: In recent years in tertiary institutions in Australia, there has been a large increase of enrolments in Education courses delivered via an online/external mode. This has raised a number of concerns around the nexus of theory and practice and whether pre-service teachers feel ready to teach after completing Education study online. The purpose of this study is to examine pre-service teachers' perceived readiness to teach Health and Physical Education (HPE) after engaging with the subject fully in an online tertiary environment. 26 pre-service teachers studying education online from two separate were involved in this study. Upon completion of the University semester and also after a practicum placement, qualitative data was collected detailing the pre-service teachers' perceptions in regard to their readiness to teach HPE. Pre-service teachers' perceptions are used as the primary data highlighting the varying levels of readiness to teach HPE.

Introduction

To date, there has been limited research investigating classroom teachers and their potential role as physical educators or as promoters of health and physical education (HPE). This is surprising given that recent research suggests "that teachers' perceptions and beliefs affect teachers' practices" (Tsangaridou, 2012, p. 282). Researchers have highlighted that understanding the belief systems of teachers is critical in improving teaching practices (O'Sullivan, 2005; Tsangaridou, 2006). More importantly, understanding early childhood and primary pre-service teachers' perceived readiness to teach and/or engage in HPE after learning the subject in an online context is important for all tertiary educators in Education, particularly those involved in online Education courses. Concerns have been raised over the nexus of theory and practice and that online delivery of education has been destroying the culture of intellectual transformation that occurs in traditional classroom and tutorial teaching (Brabazon, 2002). Research conducted by Kalantzis, Cope, and Harvey (2003) and Loudon, Rohl, Gore, McIntosh, and Greaves (2005) say that the new tertiary education environment of online learning inadequately enables students to bridge the theory-practice gap. Smith and Moore (2006) say that tertiary teacher education programs must include a structured and mentored period of theory application in real-life settings that aim to capture the theory/practice nexus vital in the preparation of teachers. This investigation is the first of a series of four investigations based around online learning in HPE at a tertiary level and is thus significant to Education in the tertiary context, particularly those tertiary institutions that offer education degrees through an online delivery.

As early childhood and primary pre-service teachers' readiness to teach HPE is central to this investigation, the authors utilise the term 'pre-service teacher' to encompass both the early childhood and primary pre-service teacher participants. There are two aims of

this research paper. Firstly, what were pre-service teachers' perceptions of their readiness to teach HPE at the conclusion of a 13 week online HPE unit? Secondly, upon completing their second year practicum placement, what were the pre-service teachers' perceived readiness to teach HPE and how (if at all) did their perceptions differ to their perceptions recorded at the end of the semester? This investigation is conducted at two regional mid-sized Australian universities who offer HPE through an online delivery. Two universities were purposely included in this study because as the Tertiary Education Quality and Standards Agency Act (TEQSA, 2011, p. 17) states, academic standards intended to be achieved by students and the standards actually achieved by students in the course of study need to be benchmarked against similar accredited courses of study offered by other higher education providers. The findings of this research are vital in understanding more about pre-service teachers' perceived 'readiness' to teach HPE and whether the online context affects this anyway. These findings may be of relevance to other tertiary educators who teach Education subjects online.

As the pre-service teachers' perceived *readiness* to teach HPE is central to this investigation, it is thus necessary to ascertain our use of this term in this paper. Additionally, as is outlined further below, in some cases, the pre-service teachers' revealed perceptions of competence in response to the question, "how ready do you feel to teach HPE?" While the pre-service teachers' perception of competence is not the focus of this investigation, it was in some cases unexpectedly revealed in the pre-service teachers' responses. Accordingly, we will outline our use of the two terms, '*readiness*' and '*competence*.' When analysing the pre-service teachers' perceived '*competence*' in their responses, they would perceive themselves as having the required skills and knowledge or capacity to teach HPE. Department of Education and Training, Western Australia (DET.WA, 2004) refer to *competency* as having professional knowledge, skills and attributes to a specific teaching context. As Huntly (2008) outlined in her work on beginner teachers' competence, acknowledging *competence* is necessary in the education profession particularly as external appraisal occurs early on to determine who enters and remains in the profession. Huntly (2008) says that to understand teacher competence, *legitimate voices* must be heard with firsthand accounts detailed of their own experiences. This we have achieved in and through this research with the use of the pre-service teachers' perceptions as the primary data. Perceived '*readiness*', we see as the state of the pre-service teacher being ready to engage in, and or enact the teaching of HPE. Hence readiness and competence frame the perceptions and beliefs that Tsangaridou (2012) outlined as effecting teacher practices in HPE. The core HPE subjects which this study is associated to are located in the second of four years of study and hence only provide a platform for teaching. For many pre-service teachers at this stage of their studies, they will have only taught up to 10 lessons.

Contextualising the Online/Virtual Learning Environment in HPE at the Two Universities

All consenting participants were enrolled in HPE via an online delivery. All course work including lectures and tutorials at both Institutions were conducted online – externally with no campus requirements. Professional experience (prac) is attended in an educational primary or early childhood setting. Each week, online students were able to listen to the weekly lecture with the exact same material as presented to the on-campus students. Online students also engaged in the same course readings as the face to face students. They were required to complete weekly online tasks and the unit coordinator offered feedback in a timely manner. Online students were placed in an online tutorial group so they had the ability to collaborate and interact albeit in a virtual capacity with fellow pre-service teachers. As a core curriculum subject, materials were organised around message systems of curriculum,

pedagogy and assessment (Bernstein, 2003) in HPE. Interestingly, subject content and assessment had much in common across the institutions even though the lecturers did not plan for this and that State-based curriculum documents were informing the experiences.

Literature Backdrop

Three discreet but inter-related theoretical bodies of literature are pertinent to this investigation. This eclectic mix includes literature on the generalist classroom teacher and HPE. Literature on what constitutes quality HPE; online learning and also literature on narrative research and why it was the chosen methodology for this research investigation. Accordingly, we have subtitled each of these bodies of literature as a means of organisation for the reader.

Health and Physical Education and the Classroom Primary Teacher

Research conducted by Graber, Locke, Lambdin, and Solmon (2008); Kirk (2005) and McKenzie and Kahan (2008) suggests that, worldwide, physical education in the early years is predominantly taught by primary teachers. The research conducted by these investigators also revealed that a significant number of primary teachers are insufficiently prepared by their teacher education programmes to teach PE including that they have limited subject knowledge; lack the necessary pedagogy in HPE; also lack in confidence or have limited access to ongoing professional development in this area. This is surprising given that research conducted by Tsangaridou (2002, p. 282) suggests “that teachers’ perceptions and beliefs affect teachers’ practices”. Given that the research outlined above by Graber et al. (2008); Lisahunter (2006); Kirk (2005) McKenzie and Kahan (2008) suggesting that, worldwide, physical education in the early years is predominantly taught by primary teachers, it is surprising that little research has been conducted on early childhood and primary classroom teachers and HPE. Tsangaridou (2002, 2005, 2006, 2008, 2012) is one notable exception and has accordingly been used heavily in terms of literary support throughout this paper.

Researchers have highlighted that understanding the belief systems of teachers is critical in improving teaching practices (O’Sullivan, 2005; Tsangaridou, 2006). Further to this, Siedentop (2009) says it is necessary to conduct research based around teaching physical education (PE) as well as research on PE teacher education in order to improve the profession of PE and, particularly the quality of PE programmes in school settings. Garrett and Wrench (2008) described the influence of university teaching experiences in PE on generalist classroom pre-service teachers’ orientations towards a critical pedagogy. Findings from their research suggested that for some student teachers, the connections made with real life experiences facilitated a more critical reflection and for others the reflective strategies did not influence them to criticize traditional practices and consider alternative possibilities in their teaching approaches.

This particular investigation builds on the above body of literature by capturing pre-service teachers’ perceptions of their perceived readiness to teach HPE after a 13 week university semester and also at the completion of their practicum placement. Readiness to teach has been addressed in the National Professional Standards for teachers. In their current form, the draft National Standards for graduating teachers is committed to ensuring a level of quality assurance regarding outcomes and graduates’ level of readiness for teaching (AITSL, 2013). Ascertaining pre-service teachers’ readiness to teach is therefore not only necessary for accreditation bodies; it informs us as tertiary educators on how our HPE units prepare classroom teachers in terms of their readiness. Further, it also informs if teaching HPE online

at a tertiary institution can influence (if at all) the pre-service teachers' readiness to engage in this subject area.

Quality HPE and online learning

Literature on quality HPE is also pertinent to this investigation, particularly as the 'Berlin Declaration' recognizes that one of the key factors of quality Physical Education depends on well qualified and confident educators (ICSSPE, 1999). Tsangaridou's (2008) research revealed that pre-service teachers' beliefs and practices in HPE during their tertiary study and also during their student teaching play a significant role in the designing and implementing of meaningful teaching tasks which in turn affects student learning. Tsangaridou's (2008) findings also correlate with previous research conducted by Morgan and Hansen (2008). Drewe and Daniel (1998) conducted research on how critical thinking is learned in the PE context and found that PE undertaken in the practical context can contribute to improved performance and to the acquisition of the 'practical knowledge' which is at the core of physical education. Tsangaridou (2008) revealed that learning to teach HPE is a process which develops throughout the course of tertiary training and the pre-service teachers' experiences and knowledge learned affects their ability to teach HPE. This highlights a distinct connection between university experience and their effectiveness as a HPE teacher.

As the online tertiary environment is important in this investigation, it is thus essential to draw upon research which centres on learning in the online context. Coates (2007) found that virtual learning was quickly becoming a more popular mode of study compared to traditional campus-based study. Coates's findings correlate with the current enrolments at institution 1 as 73% of the total students enrolled in Bachelor of Education Early Childhood or Primary have chosen to undertake their studies fully online. While, at institution 2, 40% of the total enrolments of education students have decided online study is their preferred mode of study. While a study by Bradford, Porciello, Balkon, and Backus (2007) found that the potential benefits of online learning was increased availability, quick feedback, improved two-way interactions, tracking, and building skills such as organisation, time management and communication, little research has been conducted into how Education subjects such as HPE might affect pre-service teachers' readiness to teach. In contrast, a study conducted by Pillay, Irving, and Tones (2007) discovered that students were generally less satisfied with online learning compared to traditional face-to-face learning. While this investigation is focussed purely on the pre-service teachers' perceived readiness to teach, our other investigations pursue curriculum, pedagogy and assessment knowledge of HPE acquired by pre-service teachers from the online tertiary environment.

Positioning the Study (Participants Involved)

This research investigation was conducted with 26 pre service teachers enrolled in Bachelor of Education (Early Childhood or Primary) at two different regional mid-sized Universities in Australia. This figure represents 20 percent of the total joint cohort size.

20 pre-service teachers from Institution one consented to participate and were enrolled in either Bachelor of Education (Early Childhood or Primary). Specifically, 14 were enrolled in the primary qualification while 6 were enrolled in the early childhood qualification. The Bachelor of Education (Early Childhood) course qualifies graduates to teach children from birth to grade 6 with particular focus placed on education settings from birth to grade 2. “A particular strength of this course is the specialist focus on education settings from birth to Grade 2 (age 8) and the fact that the qualification you gain upon graduation is recognised as suitable to teach in early childhood contexts (including Early Childhood Centres and Kindergartens) in any Australian state” (Institution one, 2013). The Bachelor of Education (Primary) is a pre-service teaching program which aims to prepare beginning teachers to work in the early years of schooling [Kindergarten to Year 8], and to provide a base for continuing professional learning in educational theory and practice” (Institution one, 2013). At Institution 1, the unit which the pre-service teacher participants were enrolled in is the first of two HPE core units, undertaken in sequence. While the first unit of HPE is predominantly focused on the ‘physical education [PE]’ aspect of HPE, the second core unit of HPE is undertaken in the pre-service teachers’ third year of study and focuses primarily on health. Upon completion of the HPE unit at Institution one, it is expected that pre-service teachers are able;

- to demonstrate knowledge of learning area, specific state and curriculum documents relevant to teaching health and physical education programs in the contemporary school curriculum context;
- demonstrate critical content knowledge of the nature, scope, content and learning experiences appropriate to health and physical education;
- apply a range of teaching approaches to health and physical education.

At Institution two, six students who were all enrolled in Bachelor of Education (Early Childhood) consented to participate and were also commencing their second year of a four year degree. At Institution two, there is only one core Health and Physical Education (HPE) unit for the entire education degree therefore the content covered is more intensive to that of Institution one with additional health related material incorporated. At this Institution, the early childhood degree is described as “a highly specialised field that focuses on the education of children from birth to age 8 with a specific focus on Kindy, Prep and Years 1-3” (Institution two, 2013). Upon completion of this unit, it is expected that pre-service teachers are able;

- to develop and apply a reflective and analytical view of teaching and teaching materials, and the students’ own teaching of Health and Physical Education;
- to develop confidence and competence in structuring inclusive learning tasks activities and planning purposeful programs required in teaching the Health and Physical Education curriculum;
- to develop an understanding of and commitment to the role of health, physical activity and personal development, maximum participation and enjoyment within social justice principles of diversity, supportive environments and equity;
- to explore issues of social sustainability and Indigenous perspectives particular to health and physical education.

There are a number of similarities of intent in the learning outcomes between the two Institutions, particularly in relation to the development and application of teacher materials (i.e. curriculum documents/lesson planning materials), as well as the planning of purposeful

programs required in the teaching of HPE including ensuring all students are catered for. Other key similarities are equity, principles of diversity, inclusivity and maximum participation. We are not contending that the similarities in these outcomes between the two institutions are the only factor attributing to the pre-service teachers' readiness to teach HPE, however they do become pertinent in our next investigation where we analyse the pre-service teachers' knowledge of curriculum, pedagogy and assessment after learning the subject online (Dinan Thomspon & McMahon, 2013).

Methodology

Narrative research has been increasingly utilised in studies of educational practice and experience (Connelly & Clandinin, 1990). This is no different in the specific context of HPE Dowling (2012). Like all of us, teachers tell and retell their experiences both for themselves and for others in different social settings, at different times and for different addresses. In previous research conducted by McMahon & Penney (2013), narrative was utilised in terms of pre-service teachers being able to write about, tell and depict their lived and living bodies in relation to HPE. Subsequently, the narrative approach enabled a method of self discovery and knowing in HPE pre-service teacher education (McMahon & Penney, 2013). Chan (2012) has also utilised narrative in undergraduate teaching in Hong Kong as a means for encouraging proactive learning which has also had encouraging results. Chan utilised autobiographic sessions and self inquires into the pre service teachers' experiences with a focus on understanding experience, and reflecting on experience, to create in-depth understanding of self and others. Thus, Chan created space for self inquiry to occur.

Narrative is the chosen methodology for this research as it foregrounds the pre-service teachers' perceptions as the primary data and also enables the reader (audience) to access the pre-service teachers' responses as they have actually occurred. Necessarily, it is important to establish exactly what is meant by narrative and how it was used in this research. Simplistically, narrative can be described as *any written or verbal representation* (Polkinghorne, 1988; Riessman, 1993). For Riessman (1993) the contemporary usage of narrative has come to mean anything including a few bullet points. While most people liken narrative to the act of writing a story containing an introduction, plot and ending, it can also include as Polkinghorne (1988) and Riessman (1993) state, *any written or verbal representation*. Holstein and Gubrium (2012, p. 44) suggest that; "writing has to begin somewhere" and implementing open-ended questions which occurred in this particular investigation will have a "different utility with respect to different stories." In this investigation, the pre-service teachers' responses alone only partly contribute to the overall story – that story being 'how ready they feel to teach HPE after learning the subject online.' Our voices as the investigators contributed to the open ended questions asked to the pre-service teachers but also the introduction and ending of the overall story. The pre-service teachers' responses as a collective contribute to the plot of the story with the final narrative product being an assemblage of voices (both investigators and pre-service teachers) thus "imposing a meaningful pattern" (Salmon & Reissman, 2008, p. 79). In the analysis sense, Gubrium and Holstein (1999) refer to narrative as the examination of dialogue, diverse stories, commentaries and/or conversations engaged in everyday life. As such, in the analysis sense, narrative will be also utilised in terms of examining the pre-service teachers' perceptions and this examination will add to the final story in regard to the question "how ready do you feel you are to teach HPE?"

Recruitment

Pre-service teachers at both institutions who were enrolled externally (online) were invited to participate in this study. 170 pre-service teachers from Institution one and 35 pre-service teachers from Institution two were contacted by an independent third person (research assistant) during week seven of the 13 week semester. Information about the project was outlined and the pre service-teachers were notified that they would be required to complete an online survey in week 13 (final week) of semester and again at the completion of their practicum placement (3 months after completion of the semester). The independent third party handled any queries pertaining to their involvement in the study and the obtaining of consent. While 205 pre-service teachers from the two regional universities were initially invited to participate, only 26 in total consented to participate. Once consent was obtained, consenting participants' de-identified themselves by listing their mothers' maiden name at the beginning of each survey so investigators could still track their responses at week 13 and again at the completion of their practicum placements. The investigating researchers were not privy to any consenting pre service teachers' actual names at any time throughout the research process. As such, this avoided any power issues that may have resulted between a lecturer/unit coordinator and pre-service teacher/student.

How Data was Collected

In week 13, pre-service teachers were required to respond to a series of open ended questions via Qualtrics. Qualtrics is a software program that enables researchers to collect data online. Questions included were purposely open-ended in design to encourage a more detailed response by participants. The series of questions were distributed online by the research assistant. Also, upon completion of their second year practicum placement several months later, a second series of questions were distributed online by the research assistant. Pre-service teacher participants were able to respond to the same set of open ended questions and add whether their perceptions had changed upon completing their practicum and teaching HPE in a practical setting.

How Data were Analysed

The palette of pre-service teachers' narrative responses were analysed in terms of their perceived 'readiness'. Varied levels of 'readiness' were highlighted at the completion of the week 13 tertiary semester and then tracked in terms of the narrative responses received upon completion of their practicum placement as a means of "connecting the dots" (Klein, 2000). In this way, the researchers were firstly able to ascertain the pre-service teachers' perceived readiness to teach HPE at the completion of the online unit. Moreover, the researchers were additionally able to track how (if at all) the pre-service teachers' perceived readiness to teach HPE altered from week 13 (end of semester) to after completion of their practicum placement in a school setting.

Results

Pre-service Teacher Perceptions of 'Readiness'

The table below outlines the pre-service teacher participants perceptions in response to the question; "how ready do you feel to teach HPE?" The investigators of this research project felt it was best to present the pre-service teachers' perceptions in a table format as they actually occurred with no amendments made by the researchers in any way to the actual responses. In this way, the reader is able to see all of the consenting participants' responses in an authentic way (as they actually occurred) and additionally, their responses can be tracked from week 13 of semester (table 1) to responses recorded upon completion of their practicum placement (see table 2 further below).

Pre-Service teacher	Pre-service teachers' response
1	I feel ready. I have a confident understanding of curriculum in my teaching in HPE. I feel confident at implementing HPE pedagogical approaches into a HPE lesson.
2	I feel very prepared. I feel pretty confident in applying the curriculum. I feel very confident at implementing pedagogical approaches. I have embodied these and wish to use them.
3	I could teach HPE tomorrow, I would be nervous, but feel I could give it my best with what I have learnt so far. I feel fairly confident at implementing the HPE curriculum.
4	Medium- I am happy to implement strategies like sport education model and fundamental game strategies, however I would not be comfortable teaching full time HPE without more experience. I feel very confident at catering for the embodied learner and the five dimensions of health's role in this. Inclusive education in HPE is one I feel strongly about and after engagement in content in this lesson feel very at ease about providing authentic learning experiences for all learners in my classroom. Very confident at using the curriculum, it does provide a basis for my future planning and a framework to work towards to all HPE experiences are the same in all schools and provide quality educational practices across the states.
5	I feel more confident now than I did at the start of the unit. I feel confident in implementing HPE pedagogical approaches into a HPE lesson.
6	I feel more ready than at the start as I am aware of what I can base my lessons on via the curriculum and skill development. I am pretty confident that I can make sure if I am teaching a HPE lesson to include everyone and get to know students interests as a way to base my lesson topics on. I feel fairly confident in using the curriculum.
7	Ready. Very confident to implement HPE pedagogical approaches. I feel very confident in using the curriculum.
8	I feel confident to teach HPE. Very confident to implement HPE pedagogical approaches. I feel quite confident at using the HPE curriculum.
9	Reasonably ready, am sure with practical implementation of learning, confidence will build. Fairly confident in adapting pedagogy to be appropriate to lesson.
10	I could do it, but it wouldn't be my preferred area. Very confident to implement HPE pedagogical approaches.
11	I am ready. I have no fear in relation to teaching HPE. I am looking forward to the challenge. Very confident to implement HPE pedagogical approaches.

12	I am still developing my ability to teach so I would say that I am still preparing myself to teach. Hopefully I will have more opportunity to teach HPE in the next 2 years before I graduate. I feel confident in implementing different styles of pedagogical approaches. I feel very confident that I will provide meaningful lessons based on the Australian curriculum for HPE.
13	I feel very confident. I could do it tomorrow. Not as confident with learner centred as teacher directed but I am aiming to extend on this. Very confident at implementing HPE curriculum.
14	Still feeling hesitant but definitely feel more confident and ready than the start of semester one.
15	Very ready. I will encourage HPE in my classes each day, I learned how this can be done, I also can see that HPE is more than just sport. I feel excited to engage my students in HPE as I know it will have such a positive impact on their health and wellbeing. Very confident to implement HPE pedagogical approaches. I feel reasonably confident to use the curriculum in my HPE teaching.
16	I feel that I have some understanding of what is required to teach HPE, but I do not feel that I could take a whole HPE class on my own. I feel far more confident now that I have completed ESH240, as I have a greater understanding of myself, HPE and its role in a child's life. Learning that enabled me to identify my own beliefs and experiences took away my own embedded beliefs, leaving me with such an appreciation of what HPE actually is and how it applies across all the domains of health and wellbeing. To truly teach HPE effectively is to give students a holistic learning environment, that will give them skills and knowledge they can draw on throughout their school years and into their futures as adults.
17	Well there isn't a lot of teaching HPE for the general classroom teacher at primary school. There's usually a specialised PE teacher at primary level.
18	80% ready. I feel adequately confident.
19	Yes. I feel I could now plan lessons and implement them. Some I feel confident as I have experienced them/seen them in practice, while others, such as the Sports Education Model, I have only read about, and will feel more confident implementing them after seeing them being effectively used in a educational context. Very confident in regard to HPE curriculum, as it can be used as a guide to progress through the required topics in a logical order.
20	I feel confident to teach HPE. I feel this unit has prepared me well and am very keen to put this theory into practice. I am confident of using the curriculum with careful planning and understanding of what is required of me.
21	I feel confident that I am ready to incorporate HPE into every day classroom lessons, but I am not sure I would be an effective specialist teacher in this field. I feel that i would be quite confident of teaching HPE in my classroom and this confidence would grow once I am working in a classroom of my own and over time.
22	Quite ready. More confident after had done this unit.
23	At this point I feel ready and enthusiastic about teaching a HPE lesson. Very confident. I think HPE should be a fun and engaging lesson, and hands-on, active participation should encourage and support student learning.
24	Feel extremely ready.
25	Am ready to teach HPE.
26	Ready. I feel quite confident at implementing HPE pedagogy into a HPE

	lesson.
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Table 1. Pre-service teachers' responses of their readiness to teach HPE at the conclusion of a 13 week semester

Of the 26 respondents, all pre-service teachers voiced expressed they were *ready* in various capacities to teach HPE at the completion of the 13 week tertiary semester. While the language used by the researchers in the question asked to the pre-service teachers; "how ready do you feel you are to teach HPE" was focused purely on personal perceptions of readiness, it is important to acknowledge that we the authors understand that 'ready' language was most likely to occur in the pre-service teachers' responses. Nonetheless, the above results are still promising because as Tsangaridou (2012) noted, primary school teachers are the ones who are responsible for delivering PE in primary schools in most countries.

The data revealed that a large majority of respondents voiced they were either *ready* or *very ready* to teach HPE. Pre-service teachers 2, 7, 8, 11, 13, 15 and 23 used phrases of 'very prepared' and 'very confident' and 'extremely ready' creating linked perceptions of 'very ready' to confidence and planning. Justification of their readiness is suggested through statements about implementing pedagogical approaches, positive impact, engagement and embodiment. These all demonstrate deep knowledge of HPE literature and principles. Pre-service teacher 17 spoke to having 'no fear' and 'looking forward to the challenge' which may suggest a passion for claiming a new teaching experience, maybe in a marginalised space, or that there's risk involved in teaching HPE.

There is evidence of developing knowledge bases in HPE but only 'some understanding' and not ready to 'take a whole HPE class on my own'. However, further statements demonstrate insight into the role of HPE and the exploration of personal values and beliefs and influence on pedagogy. This is reiterated in other pre-service teacher comments, for example, pre-service teacher 4 who talks to a 'medium' readiness and yet expands on embodiment, inclusion and authentic learning experiences. This data appears to show developmental growth in 'readiness' appropriate to the progression of their teacher capacities. As stated in the subject learning outcomes, Institution one requires second year pre-service teachers to have a "*developing* professional knowledge and skills to be able to plan and manage learning programs; and demonstrate a *developing* capacity to plan, implement and assess for effective teaching and learning as well as maintaining a safe and supportive learning environment." At Institution two expectations upon completion of this core subject was to "demonstrate a *developing* competence to plan, teach and assess engaging and effective learning experiences." Data evidences achievement of these learning outcomes across the 13 week immersion with pre-service teacher 12's response outlining this clearly:

I am still developing my ability to teach so I would say that I am still preparing myself to teach. Hopefully I will have more opportunity to teach HPE in the next 2 years before I graduate. I feel confident in implementing different styles of pedagogical approaches. I feel very confident that I will provide meaningful lessons based on the Australian curriculum for HPE.

Notions of generalist and specialist teaching in HPE were also linked to perceptions of 'readiness'. Pre-service teacher 21 spoke to confidence in incorporating HPE into everyday lessons but 'I am not sure I would be an effective specialist teacher in the field'. This suggests a notion of 'expert' is an issue for consideration in perceiving what readiness means. However, this participant continues to say that 'confidence would grow' from more experience over time. Interestingly, pre-service teacher 17's statement seems to imply a lack of need (and possible desire) for readiness: "Well there isn't a lot of teaching HPE for the general classroom teacher at primary school. There's usually a specialist PE teacher at primary level." Pre-service teacher 10 appears to recognise a need to teach HPE but with some hesitation with this response: "I could do it, but it wouldn't be my preferred area".

Hence, the contexts of crowded curriculum, specialist teaching and values and beliefs might be issues for consideration in ‘readiness to teach’.

As outlined above, ‘*readiness*’ was the focus of this investigation and pre-service teachers’ responses revealed some specific areas of competency and confidence in HPE. Approximately half of the pre-service teachers created a link between readiness and pedagogical approaches. Several participants articulated HPE pedagogies, for example pre-service teacher 13 said s/he was not very confident at implementing learner centred pedagogy and pre-service teacher 19, specifically stated that s/he was not confident to implement the sport education model approach as they had only read about it and not seen it in practice. Other pre-service teachers (3, 12, 13, 19 and 20) made a link of readiness to utilising the HPE curriculum. Pre-service teacher 20 spoke to being ‘...very keen to put this theory into practice’ suggesting a possible division between curriculum and pedagogy. Of the pre-service teachers who did express perceived levels of confidence/competence in their responses, it is worth noting that only pre-service teacher; 2, 4, 6, 7, 8 and 15 expressed statements outlining elements of curriculum and pedagogy together in their perceived readiness and confidence. An assumption could be made of sophisticated understandings of the relationship of curriculum and pedagogy.

Table 2 below outlines the pre-service teachers’ perceived readiness to teach HPE upon completion of their practicum placement. While the results outlined in table 1 are positive, the perceived state of readiness remained once they had actually completed their practicum placement in a school and had an opportunity to implement one or many HPE lessons.

Pre-Service teacher	Pre-service teachers’ response
1	Very Ready.
2	I do feel ready. They did not give me a lot of experiences in HPE on my prac but I am still willing to try and incorporate it in the classroom. Hope I get more opportunities next prac.
3	Still ready. I think I would like to look into some lesson ideas.
4	I would have liked more experience to plan and implement HPE lessons on my prac, however I was mainly in the classroom and did as much I as I could in there. I am confident though that I could do it well.
5	I have not done placement yet. I still feel ready to teach HPE.
6	Ready but I don’t really want to be a HPE teacher. I want to be in the classroom.
7	Very ready.
8	Totally ready.
9	Same.
10	If I was required to teach it, I would. But, I have other preferred subject areas.
11	Still Ready.
12	N/A
13	I am very confident that I am able to teach HPE in an early childhood setting.
14	More ready than when I completed the first survey.
15	Extremely! I am going to ask the teacher at the school where I work if I can put together a sequence of HPE lessons that applies to the children in our grade. I will keep you posted if I am allowed to do this.
16	Same.
17	On a scale of 1 to 10, I would say 6. I mean I would give it my best but I still feel I need some more time to adjust.

18	I still feel the same amount of readiness after completing my prac.
19	Ready.
20	Still ready.
21	Very ready. I am looking forward to teaching and incorporating HPE into my classroom.
22	Very ready and I am going to keep practising at my place of work to keep up my confidence.
23	Did not complete second questionnaire.
24	Did not complete second questionnaire.
25	Did not complete second questionnaire.
26	Did not complete second questionnaire.

Table 2. Pre-service teachers' responses of their readiness to teach HPE at the conclusion of their second year practicum placement.

As outlined in Table 2 (above), 22 of the initial 26 respondents completed the second survey. Of these respondents, it was revealed that none of the pre-service teachers felt *less* ready after completing their practicum placement. In fact, most respondents' perceived readiness either remained static or increased after completing their practicum placement. Pre-service teachers' one and seven went from being "ready" to "very ready" and pre-service teacher 8 went from being "confident" to being "totally ready." Pre-service teacher 14 originally stated "still feeling hesitant" in the first survey but then "more than ready" after completing their practicum placement. Pre-service teacher 21 stated that s/he "feels confident" in the first survey to stating "very ready" after the completion of their practicum placement. Finally, pre-service teacher 22, went from being "quite ready" to "very ready." Some pre-service teachers noted that they did not have much opportunity to engage in HPE specialised lessons while on prac. This is may be due to a number reasons including timetabling issues or a crowded curriculum. Pre-service teacher 17 is worth noting as in the first survey, s/he suggested that HPE teaching is the role of the specialist teacher and yet survey two shows: "On a scale of 1 to 10, I would say 6. I mean I would give it my best but I still feel I need some more time to adjust." The practicum experience may have altered the desire or need for HPE teaching.

While we the authors also acknowledge, curriculum, pedagogy and assessment as outlined by Penney et al., (2009) as being three fundamental factors contributing to quality HPE, the above results are promising in terms of the pre-service teachers' self determined 'readiness' and 'competence' to teach and embrace HPE. However, whilst the subject learning outcomes at both institutions called for 'developing capacity to assess in HPE', this message system was not evidenced in pre-service teachers' notions of readiness to teach HPE. Their perceptions aligned with curriculum and pedagogy. Whilst we could position these perceptions with developmental approaches in Bachelor of Education courses where deeper engagement with assessment generally occurs in the third and fourth years of study, we highlight this as a concern in our investigation here. Dinan Thompson (2013) has referred to assessment as the 'missing ingredient' in HPE and our investigation into pre-service teacher perceptions would call for more explicitness in the 13 week immersion.

However, such positive perceptions of 'readiness to teach HPE' demonstrated the capacity for online learning in tertiary studies and in particular for other Education subjects delivered online. While this study was focussed purely on pre-service teachers who were enrolled online, a future study comparing pre-service teachers enrolled online compared to face to face mode and their subsequent readiness to teach HPE would detail more information in terms of comparison about whether the online tertiary environment impacts pre-service teachers' readiness to teach. While the pre-service teachers in this investigation will most likely be classroom teachers, it is promising that nearly *all* felt they were ready to teach HPE..

Conclusion

This paper has been “written at a time when health and physical educationalists internationally are actively talking about and seeking quality PE” (Penney et al., 2009, p. 438). We have therefore sought to understand pre-service teachers’ perceived readiness to teach HPE after engaging with the subject in an online tertiary context. As such, it is important for us as tertiary educators to understand the belief systems of teachers as a means of improving teaching practices, both for pre-service teachers and us as teacher educators.

It is important to ascertain that we do recognise that curriculum; pedagogy and assessment may be fore-grounded as a focus and catalyst for engaging with quality HPE. However, it is our view that pre-service teachers’ perceived readiness is a key factor to how these future educators will embrace and implement HPE upon completion of their tertiary studies, including a practicum placement. Our study demonstrated perceptions of readiness associated with curriculum, and, readiness with pedagogy, but that a gap appeared in making an association with assessment in HPE. The interrelated nature of curriculum and pedagogy was evident for some pre-service teachers. The dynamic relationship between all three elements needs more explicit fore-grounding in our teaching. Readiness was also associated to personal values and beliefs, embodiment, inclusion and roles of specialist teaching, all of which deserve deeper exploration. In general, data suggested that pre-service teachers felt ready to teach HPE after engaging with the subject online, and after completing their practicum placement, their perceptions of their readiness to teach HPE either remained static or increased.

The authors acknowledge that there are a number of factors that could influence the perceived readiness of pre-service teachers to teach HPE. These could include but are not limited to the pedagogical design of subjects, the pedagogy and support given by the tertiary educator and subject delivery, the school context supporting (or not) the teaching of HPE etc. Nonetheless, these initial results are promising for those institutions who offer education degrees online and also to those pre-service teachers who go on to teach HPE or implement it in their classroom on a daily basis.

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