

Affiliated Schools Research Program Final Report

“PSI4QPE” as a Personalised System of Instruction for Teaching Quality Physical Education in Early Childhood

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Part 1. Achievements statement

Introducing “PSI4QPE” as a Personalised System of Instruction for Teaching Quality Physical Education in Early Childhood

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Affiliated Schools

Kaleen Primary School; Ainslie School; Southern Cross Early Childhood School; Giralang Primary School and Charles Conder Primary School.

Project time period (1/07/2021-30/06/2023)

Introduction, Aims and Purpose: Our project titled a *Personalised System of Instruction* (PSI) (Keller & Sherman, 1974) for quality Physical Education (PSI4QPE) was an evidence-based approach to teach Year 1 and 2 students QPE at five ACT Government



schools. Although internationally PSI has been used extensively to teach PE, to our knowledge it has never been used before with students this age. The study purpose was to improve classroom teacher confidence through teaching a notion of QPE as the

intersection of pedagogy, curriculum, and assessment (Penney et al., 2009). We also sought to find out if a specialist graduate primary teacher, specialising in Health and Physical Education (HPE) could successfully assume an in-situ teacher professional development and mentoring role in implementing our approach. Further, we explored the effectiveness of GoPro camera recordings ‘through the eyes of the teacher’ as an ongoing professional learning intervention for the classroom teacher participants in the study.

Challenges: Concerning project implementation, there were several challenges, including but not restricted to, the need for a range of suitable PE equipment and designated electronic devices for student task presentation, facility timetabling clashes and the release of older students from their substantive classes as assistant helpers, called proctors in PSI, without compromising their own learning.

Achievements: After a full year of successful implementation across all four Terms in 2022 and from first level data analysis there is a sense teachers valued PSI4QPE and experienced improved levels of confidence for teaching contemporary PE with educative purpose and intent. There is a sense of successful project impact



through many teacher participants commenting about the new ways they have learned for *doing* PE. Further, our initial data analysis suggests under the right



conditions, graduate primary school teachers majoring in HPE can assume the role of content specialist and teacher educator for their non-HPE specialist, who are often more experienced teacher colleagues.

Project Outputs: The research team are conducting more detailed analysis and anticipate three or more publications in quality peer-reviewed journals to report our findings. That said we already have a sense PSI4QPE is an exciting advancement in PE pedagogy for personalised learning in early childhood PE. Details of these publications when they become available will be updated in this website.

Part 2. Executive Summary

2.1 Introduction and project context

Our *Personalised System of Instruction for Quality Physical Education (PSI4QPE)* program was offered across all four Terms in 2022 to 535 Year 1 and 2 students at five ACT Government schools and involved five principals and more than 30 executive teachers or classroom teachers in planning or delivering the program. Four of the five schools were Affiliated Schools with three located in North Canberra, one in central Canberra and the other in South Canberra. Our PSI4QPE initiative had a Project Implementation Team (PIT) led by a newly graduated primary teacher with a Health and Physical Education (HPE) specialism, supported by an experienced HPE teacher and a gymnastics specialist, who were responsible for teaching the program. In addition, we had a research team consisting of consisting of nine academics and a researcher from both University of Canberra (UC) and universities across Australia. The issue PSI4QPE set out to address, was an underlying challenge in ACT schools and one also of global concern, that many primary classroom teachers have limited ability to teach quality PE. From our own anecdotal experiences and the extant literature including published research we have conducted in the ACT (Williams et al., 2021; Williams & Pill, 2019), there is much to be done in improving how PE is taught contemporarily. Specifically, ensuring evidence-based PE is taught with educative purpose, that is cost-effective using school based professional learning (PL) for in-service teachers.

2.2 Project Aim

Our PSI4QPE aim was to implement and measure the effectiveness of personalised learning utilising a *Personalised System of Instruction* (Keller & Sherman, 1974) framed by Pedagogical Content Knowledge (PCK) (Mitchell et al., 2013) to teach QPE to Year 1 and 2 student participants, with PSI being one of several PE pedagogies UC pre-service teachers learn during their studies. Essentially, PSI enables students to work through activities at their own pace through individualised, independent, and student-centred learning towards skill mastery. Our project also sought to establish proof of concept of a main part of our study design, that of 'flipping the expert'. Specifically, if our recently graduated PIT leader could assume an in-situ PL role, across all four Terms in 2022 at our five study schools, with a view to using this approach, if successful across all ACT primary schools. By 'flipping the expert', through our PIT leader, we aimed to coach and mentor in-service primary teachers

to improve their confidence, competence, and motivation to teach QPE; provide PL to classroom teachers to deliver PSI4QPE; increase school community links through best practice fundamental movement skills (FMS) teaching and determine the acceptability of school staff to adopt PSI4QPE beyond the study.

2.3 Project Approach

A mixed methods research design was adopted we felt this would yield the depth and quality of findings to be able to adequately answer our six research questions. Quantitative data were collected from the outset of the study through weekly student assessment data and qualitative data on completion of the project in Term 4 2022. The latter through interviews with principals and executive teachers and classroom teachers at all five sites.

2.4 Project outputs, deliverables and resources

The findings we report are provisional as the research team are currently conducting more detailed analysis and anticipate three or more forthcoming publications in quality peer-reviewed journals. We believe the PSI4QPE has been an exciting advancement in PE pedagogy for personalised learning in early childhood PE. Concerning resources, all five schools have contemporary PSI4QPE aligned PE equipment, supported by Chromebooks for task skills representation central to a PSI approach, all made available through the project. A video library of FMS task representation has also been created that can be used by all ACT schools.

2.5 Project Impact

As PSI4QPE was new for the schools, teacher learning was scaffolded with ten PL modules (self-paced, online or in-person learning). Teachers also had access to weekly support, allowing their confidence to develop over time and ease of transferability of learning to teaching. This led to high levels of student engagement beyond what had been seen before the project. Teachers also commented the PL was fun and meaningful and enabled them to learn contemporary, evidence-based ways of *doing* PE.

2.6 Key findings or recommendations

Our initial findings strongly support our notion that graduating UC primary HPE specialist teachers can assume a cost-effective role of being PE educators within schools, particularly through having learned up to date approaches for teaching PE, including PSI. There is also strong initial indication that our PSI4QPE was successful in increasing in-service teacher confidence for teaching QPE.

3.1 Aims and Context

Our *Personalised System of Instruction for Quality Physical Education (PSI4QPE)* project sought to address two of the Affiliated Schools grant program research priorities:

1. Early Childhood Education
2. Personalised Learning

The aim of PSI4QPE was to implement and measure the effectiveness of personalised learning utilising a PSI (Keller & Sherman, 1974) framed by Pedagogical Content Knowledge (PCK) (Mitchell et al., 2013) to teach quality Physical Education (QPE) to early childhood students. While PSI is not unique to PE, it is a pedagogy University of Canberra (UC) [Bachelor of Primary Education \(HPE\) 324JA](#) pre-service teachers learn in their second Year unit [9861 Contemporary Physical Activities](#) as part of a suite of evidence-based pedagogical approaches for teaching PE compiled by Metzler (2017). Essentially a PSI enables students to work through a set sequence of tasks at their own pace. Its characteristics can be summarised as:

- Individualised, student-centred learning.
- Independent student learning where the teacher is more of a facilitator.
- Multi-modal task presentation.
- Student self-assessment verified by the teacher or proctor.
- Promotes a “mastery” learning environment.
- Students set up learning tasks themselves based on task presentation.

The version of QPE we share and uphold within our Faculty, is that of Penney and colleagues (2009), who described it as the intersection of curriculum, pedagogy and assessment.

The study involved 535 Year 1 and 2 students at five ACT Government Education study schools. Our project also sought to establish proof of concept of a main part of our study design, that of 'flipping the expert'. Specifically, if a specially appointed high performing graduate teacher, 324JA qualified, can assume an in-situ teacher professional development (PL) role, across all four Terms in 2022 at our five study schools.

3.1.1 Project Need

From our own anecdotal experiences and the available literature including published research by the PIT in the ACT (Williams et al., 2021; Williams & Pill, 2019), advancements

are required to how PE is taught towards reality congruence (Elias, 2012 [1970, 1978]). Reality congruent PE is for teachers to be able to consider and take stock of available disciplinary knowledge allowing them to realise the full breadth of AC: HPE (ACARA, 2023) directives for PE within HPE. Specifically, we addressed an underlying challenge in ACT schools and one also of global concern, that often primary classroom general teachers have limited ability to teach QPE. Main reasons for this reduced capacity are: inadequate training, delivery time, or systemic marginalisation (Edwards et al., 2019; Jones & Green, 2017; Morgan & Bourke, 2008; Morgan & Hansen, 2008; McMaster, 2019).

3.1.2 Research Questions

There were six research questions (RQs):

- RQ1. How can completing context-specific Year 1 and 2 focused PE PL facilitate engaging, meaningful, and innovative practice?
- RQ2. What was the impact of our early childhood personalised learning project on teaching PE in the study schools?
- RQ3. Can a graduate teacher assume the role of a PE educator for ACT primary school teachers?
- RQ4. What was the Year 1 and 2 student experience of our personalised learning approach, and is there a preference for certain instruction and task presentations?
- RQ5. To what extent if any, did the use of Year 5 and 6 proctors add educative value to the project?
- RQ6. How feasible is the continuation of the project as a system level intervention?

3.2 Methods

We delivered the PSI4QPE project as an intervention across five schools through our Project Implementation Team (PIT), central to which was the appointment of Sophie Newton, as a high performing UC graduate specialist primary HPE teacher. A key part of Sophie's role was to upskill classroom teachers in the approach, which Sophie skilfully demonstrates ['through the eyes of the teacher educator'](#) using a chest mounted video as a main method adopted for teacher professional learning (PL) at the participating schools. Sophie also received mentoring from PIT members: Belinda Fenson, Physical Education Content Knowledge Consultant and Primary Physical Education Teacher, Wanniasa Hills Primary School and Naomi Nye, as our Gymnastics Content Knowledge Consultant in Terms 2 and 3. The nature

of this project was one of collaboration, which included Sophie co-designing with participating teachers to incorporate new ways of *doing* into their existing practices. Consequently, teachers across the five schools contributed to developing nuances about our PSI4QPE approach as it applied in their contexts during all four Terms of 2022, rendering teachers an integral part of the project. Finally, our PIT also consisted of one UC scholarship winner at each school, whose role was to assist Sophie in the implementation of the project as ongoing PL to help them further understand PSI4QPE for their future careers.

3.2.1 Mixed methods approach

To yield the depth to assess the full breadth of our research questions, a mixed methods approach was conducted. Quantitative data was collected from the outset of the study through weekly student assessment data, with personalised learning assessment in Terms 2, 3 and 4, 2022. Qualitative data was collected on project completion in Term 4, through interviews with principals, executive teachers and classroom teachers at each school.

3.3 Key Findings and Outcomes

What we present is a sample of participant responses as they relate to the RQs. It is beyond the scope of the report to provide more detail given page restrictions and the high volume of data which we are still analysing. In other words, we have provided only indicative or provisional findings that need further synthesis. Further, regarding the qualitative data we have predominantly drawn upon the teacher interview and principal interview data in meeting the page restrictions of the report.

RQ1. How can completing context-specific Year 1 and 2 focused PE professional learning facilitate engaging, meaningful, and innovative practice?

Overall, teachers felt the range and quality of the PL offered was valuable, specifically citing the usefulness of the online modules about the PSI4QPE approach at the beginning of the project (Teacher 4). However, Principal School 3 commented “I think it was a bit varied as to how much they took from the PL online. I think it had to be online because of the year that we’ve had, absolutely. And it meant that everyone was able to access it, but I also think that teachers generally at the moment have had enough of online”. Teacher 22 expressed some reservations about the PL, similar to what others expressed: “there was a lot of skills and reading included so that I was able to know what I needed to teach, and I think to begin with, on top of the load of things we’re teaching, that felt a little bit overwhelming”. The most useful PL appeared to be the gymnastics, which was considered as being particularly

useful (Teachers 4, 6, 13, 15, SLC School 2). Teacher 4's comments were typical: "I've had some experience in the past of experiencing some gymnastics teaching but it presented in a really new way, and it's allowed me to actually go and do some lessons with my class from knowledge that I've learned there and have a better understanding about the methodology behind the importance of teaching some of those skills".

The value of shared learning with and greater cohesion amongst staff from professional conversations and reflections about the PL was also commented about (Teachers 6, 15, 16). There was also a sense of stronger cohesion not only between the teachers, but also with the children (Teacher 2; Principal School 1). For example, an Executive Teacher at School 1: observed "the students have really enjoyed knowing that we we're all learning at the same time". An indication of the quality of the PL was the ease of transferability of learning to teaching (Teacher 6). Also, that it was meaningful and developed teacher confidence for delivering QPE (Teachers 6, 13, 16, 19). The ongoing and depth of the PL was also seen as beneficial (Teachers 6, 15, 24) and reflected in Teacher 24's comment. "I think professional learning for educators has traditionally been very much a give and get type thing rather than an ongoing participation, so very much either an online course or a one-day workshop or something like that, but this program differed in the fact that we were part of the program in an ongoing way". Principal School 3 summed up the project PL commenting it was valuable in "lots of different areas".

RQ2. What was the impact of our early childhood personalised learning project on teaching PE in the study schools?

As PSI4QPE was new for all the schools, teacher learning was scaffolded in stages across all four terms, allowing their confidence to develop over time and effectively implement this new approach, leading to high levels of student engagement beyond what PE had been like before the project (Teachers 1, 2, 3). The gymnastics taught in Terms 2 and 3 was seen by some as being particularly engaging for the students (Teacher 3). Teacher 3 commented that "the levels of ability and entry into the activities worked really well for my class... and each student was able to engage in the activities at their kind of ability". The teachers observed PSI4QPE was useful in increasing students' competency as they progressed towards FMS mastery (Teachers 5, 17). Teacher 5 commented "the confidence that they got from being able to see themselves improve by assessing and knowing when to challenge themselves, or when they might have needed a bit more practice was really good".

Also noticed was the student-centred nature of PSI4QPE and how the students were able to take responsibility for their learning and how that was motivating for many (Teachers 1, 5, 12, 13, 14). Another PSI characteristic recognised as being useful and working well was student choice (Teachers 5, 22, 25). Teacher 15 commented how they had seen the program develop over the year in terms of quality and impact: “I would say the way the program's changed in that time that's gone from term one being skill rotations to now term four applying these skills in the form of other FMS, having proctors, having Chromebooks”. The way FMS were broken down through PSI4QPE was also valued (Teacher 18). Teachers also thought the new and different approaches to assessing PE they learned through the program were useful and worked well including student self-assessment and teacher verification (Teachers 2, 5, 12, 13, 18, 19, 22).

Teachers typically spoke about using restricted and what we would call more traditional approaches to assessment that lacked reality congruence and reflected the limited approaches we found in previous research with ACT teachers (Williams et al., 2021). For example, Teacher 19's stated “I had never considered that approach for PE. I guess, in the past I've always learned that as a checklist that the teacher does, you know, “Can they do it?” - “Yes.” “They can't do it.” - No, check”. The broad recognition and appreciation of new and alternative ways to assess PE beyond checklists, is a move towards more evidence-based notions of quality PE, since assessment intersects with curriculum, pedagogy and assessment as one notion of quality QPE (Penney et al., 2009) the research team share.

RQ3. Can a graduate teacher assume the role of a PE educator for ACT primary school teachers?

Our findings supported our notion that a graduating teacher from UC's 324JA degree, could assume the role of a PE educator, having learned up to date, contemporary approaches to teaching PE, that included PSI. There was no mention about our graduate specialist PE teacher educator being ineffective because of inexperience. Instead, many teachers commented about the new ways of *doing* PE learned from the project's specialist PE teacher educator and their increased confidence to deliver QPE (Teachers 1, 4, 5, 13, 14, 16, 17, 19, 22, 23, 25). Concerning support, Teacher 19 commented: “I valued the support from Sophie. I felt like I could ask – again, going back to I've not really done PE teaching like this before, so I felt like I could ask her for guidance. She always gave us alternatives for things,

especially if it was around equipment that we didn't have at school or around a particular student who she could see needed something additional or extra something".

RQ4. What was the Year 1 and 2 student experience of our personalised learning approach, and is there a preference for certain instruction and task presentations?

Each term Year 1 and 2 students were introduced to twelve different FMS. These FMS were completed through rotational stations or student-led, through the sports of gymnastics or tennis. Through the PSI4QPE approach, students self-reported their perceived competency (self-efficacy) for a given FMS, which was quality assured by the project specialist PE teacher educator or primary teacher, through individual demonstration to verify student's perceived competency. A key feature achieved through PSI4QPE was improving classroom teachers' capacity to be competent in assessing student achievement standards through the personalised learning environment they had co-created with their students.

Further analysis of the quantitative data is needed to make final conclusions across the five schools. However, preliminary data across the five-school cluster indicates student perceived competency is often not achieved in one standalone lesson, but requires deliberate practice, 'play with purpose' (Pill, 2015). Our project highlights students require further volume of practice and repetition, compared to how school timetabling or traditional ways in which PE is delivered whereby students are transitioned onto new content too quickly, without having sufficient time for students to know and feel they are ready to progress. Although some students may indeed achieve self-reported competency quickly. For example, ~39% of Year 1 and 2 students at one participating school self-reported achieving FMS competency in the first week of term using PSI4QPE across Terms 2, 3, and 4. Nevertheless, a quarter of the same class of students (28%) required an additional two to four weeks of deliberate practice' to reach perceived competency. Indicating the skill or task challenge required further independent learning to accomplish competency with support from a more knowledgeable other (e.g., proctor, classroom teacher, or project specialist PE teacher educator) to provide further diverse learning experiences for exploration (i.e., proximal development, Vygotsky, 1978).

RQ5. To what extent if any, did the use of Year 5 and 6 proctors add educative value to the project?

The teachers considered the use of proctors, introduced through the project as valuable. Teachers valued proctors because, along with the UC scholarship winners they could offer

targeted learning (Teacher 1, 3, 5, 12, 24, 25, School 5 SLC) and assessment support (Teacher 12). Also, about how proctors can add contribute to learning in other subject areas (Teacher 4). Other teachers noticed how proctors, once competent in their role, seemed to be engaged and experience a sense of accomplishment in helping and supporting the younger students (Teachers 4, 5, 12). Other teachers commented about the role of proctors being a good leadership opportunity (Teachers 6, 24) and a more formal 'buddy system' for those older students (Teacher 6). However, one teacher reported tensions around taking older students out of class to perform this role and the corresponding missed learning (Teachers 12). Also, how proctors could sometimes become disengaged (Teacher 2) suggesting the need for some training before commencing the role (Teacher 13). In contrast some commented about how proctors were genuine, caring and passionate about movement and willing to share their knowledge with the younger students (Teacher 2). Teacher 2 commented: "you had to sometimes leave the proctors and just say, "Okay, this is what we're doing, reminder why you're here." But after we've had that chat, most of them were great at being experts, great leading that type of thing".

RQ6. How feasible is the continuation of the project as a system level intervention?

Concerning the extent to which the project has capacity to continue and be successful at a system level, teachers were optimistic about what might be possible (Teachers 1, 2). In terms of enabling sustainability, it was suggested, making it a priority at the start of any given year (Teachers 2, 6) and teaming up with another class on account of the students being so young (Teacher 2). Also, having age-appropriate relevant PE equipment set aside solely to use with this program along with Chromebooks and booking hall or gym space (Teachers 4, 6, 14). Teacher 14 articulated a common concern raised by some of the teachers that it was a lot of effort to organise the program. Also, having teachers who have gone through the program share their knowledge with teachers who were not part of the program or who are new to the Year 1 and 2 teaching team (Teacher 4). In relation to this briefing, ensuring that it is explained that it is a year-long program and how develops and takes shape over the full year (Teacher 15).

Regarding principal responses, Principal School 3 commented: "I find that unless teachers have had a passion themselves in sport or have been around sport, I find that they tend to go back to the easy things" continuing and specifically referencing our project "So, I think... an expert coming in and demonstrating to our teachers just how easy it is to set up,

to facilitate with a group of children, and all the different movements and things that you can teach in a series of lessons... I think that's been really valuable". In Section 3.5 we respond to this principal's concern about the need for teachers to be passionate about PE.

3.4 Impact

Perhaps a useful way to start this section is to draw on a comment by Principal School 2 who observed "I think it really has built the capacity and opened up our teachers' eyes into how PE can... and another way of looking that we probably never really had thought about before". This comment sums up much of the sentiment and overall positive feedback participants expressed about the study. There is a sense from our initial findings, the project introduced all the participants to new ways of *doing* in PE and away from traditional teacher-centred approaches to those that were contemporary and that were more reality congruent with AC: HPE curriculum directives. This tighter alignment, along with improved assessment approaches through a wider range of more appropriate assessment tools, enabled teachers at the five schools to deliver a version of QPE along the lines imagined by Penney and colleagues (2009).

By shifting from teacher-centred approaches to student-centred personalised learning, PSI4QPE enabled teaching with greater educative purpose and measurable student improvement in their FMS development and mastery. In terms of scale of impact, we consider the use of five schools involving over 550 participants, including students, principals, and teachers, enabled an acceptable and compelling account of the use of PSI4QPE as personalised learning in early childhood. Finally, it is anticipated there will be at least three quality peer-reviewed articles emanating from the study that we expect to be published in high quartile academic journals within the next 12 to 24 months.

3.5 Engagement, Dissemination and Sustainability

Across all five study schools and as reported in our findings, there was a high level of engagement by the principals, teachers and students. About sustainability, please see our initial response to RQ6 in pages 13-14 above. In summary, we identify the following challenges for continuation of PSI4QPE in the study schools and if the approach was disseminated to other ACT Government primary schools: 1) the teaching of quality PE needs to be valued in schools compared with the more "serious subjects"; 2) PE equipment must be fit for purpose and Chromebooks "ringfenced" for exclusive use with the PSI4QPE approach; 3) problems such as timetabling of facilities and associate clashes need to be

resolved as do the release of older students as proctors according to different schools and their contexts and 4) at least one teacher must be passionate and persistent about driving QPE given the associated work and effort. If these ongoing challenges are addressed, PSI4QPE can make a significant contribution to personalised learning in early childhood education. About linkages to other grants, a new Affiliated Schools funded pilot study developed from this project: *Integrating STEM Practices into PE as a Personalised Learning Approach for Year 1 Students*. This new study was undertaken in 2023 and was led by Kaleen Primary School, one of the participating schools in this project.

3.6 Wider Implications

One of the most significant wider implications from the project is that from a review of the extant literature, it would seem there has never been previous research about PSI in early childhood PE. Our approach demonstrates PSI can be used successfully and is fit for purpose for the age group we trialled. The project also addressed earlier research with ACT PE teachers, that highlighted many never used evidence-based approaches in their teaching (Williams & Pill, 2019) and used a limited range of assessment instruments, many of which lacked educative purpose (Williams et al., 2021). At the study schools, PSI4QPE has continued across 2023, where participating teachers have made additional adaptations to the 2022 project to meet the evolving needs of their school context. For example, staff at Giralang Primary School have incorporated more Rhythmic and Dance Movement into their regular PE lessons after 1) learning the educative value of this approach in teaching and engaging primary students FMS development, and 2) feeling competent in their ability to deliver content from their involvement in the program. Nonetheless, we found there were a lot of ‘moving parts’ in implementing PSI4QPE with early childhood students that requires a lot of planning and effort for the school involved for it to be successful.

At UC, the pedagogical approach implemented in this project has informed further refinements to unit [9887 The Practice of Teaching HPE](#) which is offered in the 321JA degree. Specifically, towards personalised learning in early childhood and primary Year bands, showcasing opportunities for initial teacher educators to learn how to build student agency using PSI4QPE. Further, and anecdotally, Sophie Newton, other teacher participants at the five study schools, and the UC scholarship winners have implemented learnings from PSI4QPE in their respective schools across their PE classes in 2023. Both with their early childhood students and trialling it with older students. Finally, there were two unexpected

outcomes from this project. First, Chris Shaddock, Kaleen Primary Principal saw significant value in employing a 324JA graduate and subsequently employed Sophie Newton from 2023. Second, three of the schools, Ainslie School, Giralang Primary School, and Charles Conder Primary School expressed interest to host school-based clinics for unit 9887.

3.7 Conclusion and Reflections

There were several factors instrumental to the success of this project. These included being able to identify a graduate teacher who was capable of stepping into a teacher educator role, a role normally reserved for someone with many years of experience; having a carefully selected PIT to support Sophie Newton, and a research team capable of conducting high quality research in highly ranked peer-reviewed academic journals in our field.

We found the PSI4QPE approach could be used with early childhood students concurring with the view of one of the study school principals, that early childhood students *are* capable of being self-directed learners. Such a view seems to conflict with the extant PE literature, that the PSI approach is only beneficial for older students. Our PSI4QPE approach gained widespread acceptability by the principals, teachers, and executive staff in our study schools. We found proof of concept that a high performing recently graduated HPE teacher can adopt the role of teacher educator within schools, to increase generalist primary school classroom teachers' confidence in teaching PE. As a cost-effective way to upskill in-service general classroom teachers in contemporary PE approaches, we therefore recommend UC's 324JA graduates adopt this role instead of the use of highly experienced specialist HPE teachers as an expensive alternative. That said, successful implementation of the project is dependent, upon teachers and other school staff overcoming the challenges we identified in Section 3.5.

Appendix A. Media coverage

The project attracted the following media interest:

1. University of Canberra Uncover <https://www.canberra.edu.au/uncover/news-archive/2022/october/transforming-pe,-one-lesson-at-a-time>
2. There were other media reports including from WIN News but these have expired.

Appendix B. Professional development provided to teaching and/or educational design and support staff

A total of ten hours of TQI accredited PL training was created and delivered across 2022 (refer to Table below). Professional learning was provided to facilitate developmentally appropriate QPE by referring to and establishing explicit connection with the AC: HPE. For example, a focus on setting clear learning objectives, lesson planning, task analysis and content progression involving the sequencing of learning on using a personalised unit plan, support with evidence-based assessment. Further, the sessions were designed in such a way to develop classroom teachers and UC scholarship winners' capacity and competency to deliver the PSI4QPE approach. Thereby enabling students to progress at their own pace through sequenced FMS tasks through gymnastics and tennis. Collectively, the sequenced PL sessions were co-designed with the PIT, project specialist PE teacher educator, and teachers.



Figure. Naomi Nye, the project's Gymnastics Content Knowledge Consultant, in action delivering the practical workshops to participating teachers on how to effectively implement the project's content and pedagogical approach.

Table. Outline of TQI accredited professional development training for the project.

Date	Duration (hrs)	Content	Purpose	Location
Self-paced online learning during Term 1, 2022	1 hr per module (5 hours in total).	5 x TQI accredited self-paced online learning modules through the Project's Teams platform.	To upskill participating teachers with the necessary PCK to feel adequately prepared to implement the PSI4QPE approach in Term 2, 3 and 4.	Online
24th and 31 st March 2022. In-person practical workshop.	1.5 hrs. Two workshops were offered at the start of Term 3 where participants were only expected to attend one.	Gymnastics Australia Accredited Launchpad Ignite Year 1 & 2 Teachers Training Course. PART 1.	Practical session PART 1, delivered by our Gymnastics Content Knowledge Consultant, Naomi Nye, unpacking the Rhythmic Launchpad Ignite Year 1 & 2 Teachers Training Course for FMS development using PSI4QPE.	Kaleen Primary School
9 th May 2023. Online workshop.	1 hr	PSI contextualised for Years 1 and 2 – reflexive learning session.	Delivered by is our Program Pedagogy Knowledge Consultant, Professor Shane Pill, Flinders University, this session was designed to assist teachers to share their experience to date and gain feedback on how to further develop the implementation of the PSI4QPE approach for students to achieve 'mastery' of their learning.	Online
28 th July and 4 th August 2022. In-person practical workshop.	1.5 hrs. Two workshops were offered at the start of Term 3 where participants were only expected to attend one.	Gymnastics Australia Accredited Launchpad Ignite Year 1 & 2 Teachers Training Course. PART 2.	Practical session PART 2, delivered by our Gymnastics Content Knowledge Consultant, Naomi Nye, facilitating practical reflexive learning session.	Kaleen Primary School
24 th October. Online workshop.	1hr	PSI contextualised for Years 1 and 2 learning striking, catching, and throwing techniques through the sport of tennis.	Delivered by is our Program Pedagogy Knowledge Consultant, Professor Shane Pill, Flinders University, on how to implement the learning content for Term 4 2022	Online
Total	10 hours of TQI accredited professional learning			

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