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## **Teacher's Perceptions of how they Influence Student Academic Performance in VCE Physical Education**

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*Abstract: This research explored teacher perceptions of how they influence academic performance of Victorian Certificate of Education (VCE) Physical Education students. VCE Physical Education teachers (n = 37) from 31 secondary schools in Victoria, Australia participated in a qualitative study using focus groups with a semi-structured interview schedule. Recorded focus group discussions were transcribed verbatim, coded and analysed (NVivo 11). A social-ecological model was used to categorise emergent themes. At the individual level teachers perceived content knowledge, expectations, passion and enthusiasm, pedagogical content knowledge and use of reflective practices to inform teaching as key factors influencing student academic performance. Social level influences identified were positive student-teacher relationships and student access to the teacher outside of class time. The emergent themes highlight the teacher perceptions of the key factors of effective teaching in this context. Professional learning opportunities to improve effectiveness of pre-service and in-service teachers of senior-secondary physical education are discussed.*

### **Introduction**

Evidence suggests that teachers are the most important school based influence on student academic performance (Hattie, 2003; Kyriakides, Christoforou, & Charalambous, 2013; Rowe, 2003) and that they account for up to 30% of the variance in student achievement (Hattie, 2009). Behaviour, specifically teacher behaviour, is in turn influenced by individual, social, physical environment and policy level factors (Elder et al., 2007) that impact on the decisions made by the teacher with respect to the pedagogical approach adopted. The intention of curricula in senior-secondary physical education is to apply key knowledge and skills within theoretical and practical contexts. Finding what constitutes the 'optimal methodology' (Thorburn, 2003) is a constant challenge for teachers of senior-secondary physical education if they are to influence student academic performance.

Teacher effectiveness has been strongly linked to student achievement and, as one aspect of teacher quality, can be measured by student achievement in standardised tests. Student academic performance, as argued by Cruickshank and Haefele (2001), is only one outcome of effective teaching. However, at the senior secondary level, academic performance is highly regarded as a measurement of student success and may be used by a wide range of stakeholders, including students, parents, teachers, higher education institutions and employers to make decisions on the students future, such as entrance into higher education or

the labour market (Dufaux, 2012). Qualities, characteristics and teaching practices that enhance student learning have been extensively researched to seek an understanding of what it is that constitutes quality teaching. At the senior secondary level, it can therefore be justified that student academic performance is a reasonable indicator of teacher effectiveness.

Increases in student achievement can be attributed to teacher effectiveness (Hattie, 2003; Horsley, 2012; Stronge, 2007). There have been a number of reviews and meta-analyses that have attempted to find a suitable framework to investigate teacher effectiveness (Creemers & Kyriakides, 2015; Donker, De Boer, Kostons, Dignath van Ewijk, & Van der Werf, 2014; Klassen & Tze, 2014; Kyriakides et al., 2013; Muijs, Campbell, Kyriakides, & Robinson, 2005), and specifically in physical education (Dyson, 2014; Metzler, 2014; Rink, 2013; Ward, 2013). Teacher characteristics including age, gender, years of experience and level of qualification do not appear to predict teacher effectiveness (Slater, Davies, & Burgess, 2012). However, effective teachers have been found to demonstrate better classroom management and to utilise learner-centred approaches (Opdenakker & Van Damme, 2006). Generic teacher behaviours that contribute to effective teaching have previously been identified (Stronge, 2007). These include prerequisites for effective teaching (including verbal ability, educational coursework undertaken in teacher preparation programs, level of certification, content knowledge and teaching experience), the teacher as a person, classroom management and organisation, planning and organising for instruction, implementing instruction, monitoring student progress and potential. While some pedagogical behaviours may be generic across all teaching contexts (Ward, 2013), the differences in teacher-related factors that exist between subjects and those that exist within the subject suggest that there is a case to support differentiated teacher effectiveness (Muijs et al., 2005). However, little is known about the factors that teachers perceive influence student academic performance in senior-secondary examinable physical education. A social-ecological model can provide a conceptual framework to understand the numerous factors that influence teacher behavior. Factors that influence behavior can be identified at the individual, social, physical environment or policy level (Elder et al., 2007; Salmon & King, 2010). The social-ecological model allows for the multiple influential factors on teacher behaviour to be categorised and used to inform strategies that target different levels of influence to be designed and implemented with the intention to increase student academic performance. There is a reciprocal relationship between factors, with social, physical environments and policy influencing the behaviour of the individual (teacher) and vice versa (Elder et al., 2007). Factors influencing teacher behaviour at the individual and social level are more readily modified or 'inside' the teacher's control (Morgan & Hansen, 2008). Influences at the physical environment and policy/organisational level (for example, timetabling, access to professional learning opportunities or resources and facilities such as a gymnasium and weights room) are generally beyond the control of the individual teacher and may be perceived by teachers as barriers to effective teaching. Previous research has consistently demonstrated that the classroom-level and specifically what teachers know and what they do in the classroom, is more important than the school-level at influencing student learning (Hattie, 2003; Kyriakides et al., 2013; Rowe, 2003). A study which examined student achievement in the final year of secondary education in Australia found that the class and teacher effects accounted for 59% of the residual variance in students' achievement (Rowe, 2004).

"Excellence in teaching is the single most powerful influence on achievement" (Hattie, 2003, p. 4). The importance of improving teacher quality (teacher excellence, expert teacher, accomplished teacher, teacher effectiveness) is seen in policy documents and governments, accrediting bodies and schools as they embrace the notion of quality teaching through professional teaching standards (Victorian Institute of Teaching, 2017).

Acknowledging that quality teaching is imperative for student achievement, governments and educational accrediting bodies enact policies designed to improve teacher quality (Dinham, 2013; Witte & Jansen, 2015). The notion of quality teaching is difficult to define for the broad range of contexts found in schools (Wang, Lin, Spalding, Klecka, & Odell, 2011). What quality teaching looks like is generally different in every classroom, with every cohort of students in every subject at every year level. After decades of research, there is little consensus, and possibly more conjecture over what quality teaching looks like. There is no 'one-size-fits-all' definition. Findings are inconsistent across curriculum areas, year levels and school settings, and while it is assumed that quality teaching is imperative for high student academic performance, the concept of quality is often defined differently (Wang et al., 2011). This kaleidoscope of ideas that has contributed to an understanding of quality teaching is perhaps why the notion of quality is so broadly defined in policy documents and teaching standards. However, Penney, Brooke, Hay and Gillespie (2009) suggest that a "universal notion of quality may be neither appropriate nor helpful" (Penney, Brooker, Hay, & Gillespie, 2009, p. 423). Therefore, it may be more appropriate to attempt to define quality teaching within a given context.

It is commonly accepted that more effective teachers have greater impact on positive student outcomes than less effective teachers (Hattie, 2012). While much research has been conducted into effective teaching, little has focussed specifically on senior-secondary education, yet understanding the nature of good teaching in different contexts is thought to be important (Healey, 2000). In a study of senior-secondary teachers in New South Wales, Australia, across a diverse range of subject areas, teachers identified their relationship with their students, classroom practices, the student themselves and faculty cooperation as key attributes for student success on the external examination (Ayres, Sawyer, & Dinham, 2004). Teachers across an array of year 13 subjects who facilitated high academic performance among their students in Scholarship examinations in New Zealand were found to have deep content knowledge, passion for teaching and held high, yet realistic expectations for their students (Horsley, 2012). Specifically in senior-secondary physical education, effective teaching has received little, if any attention. Historically, teacher effectiveness research in physical education has lacked outcome measures to verify that the learning and teaching practices contributed to student achievement of the desired outcome objectives (Metzler, 2014). The concept of effective teaching measurable by student achievement is not supported by some (Dyson, 2014), however, in senior-secondary physical education, where high-stakes examinations are used to determine academic achievement of students, teachers of students with high academic achievement are often perceived to be more effective. Research on teacher effectiveness in physical education recognises the complex interactions between the student, teacher, content and context (Hemphill, Richards, Templin, & Blankenship, 2012) and more recently the focus has been on the student as a mediator of instruction (Rink, 2013). Teacher effectiveness in physical education has been the focus of much research (Behets, 1997; Parker, 1995; Rink & Hall, 2008), yet despite the high-stakes associated with senior-secondary physical education there has been little research conducted, particularly in the context of the Victorian Certificate of Education (VCE) Physical Education course. Students can elect to undertake VCE Physical Education in their final two years of secondary education in Victoria, Australia. In their exit year, student academic performance in VCE Physical Education is determined through a series of internal tasks (50%) and an externally set and assessed end-of-year written examination (50%). The influence of the teacher on student performance in these tasks is unknown and therefore, the aim of this research was to explore teacher's perceptions of how they believe they influence academic performance of their students in the context of VCE Physical Education.

## **Method**

### **Participants**

Following approval from the University College Human Ethics Advisory Network (CHEAN), teachers of VCE Physical Education were invited through professional networks to participate in a semi-structured focus group. All teachers who responded to the advertisement were provided with a participant information letter and those who agreed to be involved provided consent. Schools (n=31) and teachers (male = 23 and female = 14) from metropolitan Melbourne and regional Victoria from each sector (Government, Catholic, Independent) were represented in the sample. Prior to the focus group discussion, participants completed a brief questionnaire to determine demographic information (gender, age, level of qualification, years of teaching experience and school sector). Recruitment continued and focus groups were conducted until saturation of themes was reached.

### **Focus Group Discussions**

A qualitative approach, employing a semi-structured interview schedule with focus groups of two to six teachers of Units 3 and 4 VCE Physical Education teachers were conducted by a trained facilitator until no further emerging themes were identified. A total of nine focus groups (interviews) were conducted between October 2013 and March 2014, in locations convenient to the participants. Private rooms, where participants could not be seen or heard by those not participating in the study were utilised for the focus groups. Clear rules were articulated by the facilitator to ensure the environment was conducive for participants to feel comfortable disclosing information, asking questions, clarifying or disagreeing with the responses of others (Freeman, 2006; Sim, 1998). Focus group discussions ranged from 45 – 85 minutes in duration and focussed on teacher perceptions of teacher-related influences on students' academic performance in VCE Physical Education. Discussions were recorded using a digital voice recorder, downloaded and transcribed verbatim by one researcher to ensure consistency and accuracy of the data prior to analysis (DiCicco-Bloom & Crabtree, 2006). Additionally, written field notes were logged as a means to provide contextual details of the focus group and to record non-verbal interactions (such as nodding or shaking of the head), participant reactions (for example laughter), hesitations (for example pauses in responses) and emotions (for example changes in tone, volume or speed of speech) of participants that were later linked with the verbal accounts to ensure that the transcribed data reflected the discussion as accurately as possible (Cope, 2009; Punch, 2009; Sim, 1998).

### **Data Analysis**

All de-identified data (transcribed discussions and demographic questionnaire) from teacher focus groups were analysed using NVivo (Version 11) software package. An inductive content analysis (Elo & Kyngäs, 2008) was performed to identify emergent themes in the data. The coding process was iterative and recursive (Grbich, 2013; Green et al., 2007) to ensure familiarisation with the data and what it contained. A four step process was utilised (Green et al., 2007). Firstly, data immersion was achieved through listening to the recordings multiple times prior to transcription and then reading and re-reading of the transcribed data. Transcription errors were identified and corrected at this point, during the data cleaning process. During this process, text was highlighted; underlined and descriptive annotations were made in the margins. Open coding (step two) was conducted by the lead author asking questions of the data, making comparisons and looking for similarities and differences (Cope,

2009). The third step involved categorising the data at the individual, social, policy and physical environment levels of influence using the social-ecological model (Salmon & King, 2010) as a framework to understand the multiple factors that influence teacher behaviour. Finally, themes were generated through an interpretation of the data underpinned by the social-ecological model (Elder et al., 2007) to explore teacher perceptions of influences on student academic performance in VCE Physical Education.

## Results

A total of 37, Unit 3 and 4 VCE Physical Education (PE) teachers from government and non-government schools in metropolitan Melbourne and regional Victoria (Table 1) were involved in the focus groups.

| Teacher | n  | Age (years)<br>Mean (SD) | Teaching experience (years)<br>Mean (SD) | Unit 3 and 4<br>VCE PE<br>teaching<br>experience<br>(years) | School sector                        |
|---------|----|--------------------------|--|---|--------------------------------------|
| Male    | 23 | 41.2 (9.8)               | 17.2 (9.9)                               | 10.0 (8.6)  | Government: 12<br>Non-government: 11 |
| Female  | 14 | 39.8 (9.2)               | 16.9 (9.4)                               | 9.1 (6.0)   | Government: 3<br>Non-government: 11  |
| Total   | 37 | 40.7 (9.4)               | 17.0 (9.7)                               | 9.3 (7.6)   | Government: 15<br>Non-government: 22 |

**Table 1: Teacher demographic characteristics**

All teachers in the focus groups held a teaching qualification; 4-year Bachelor degree (n=26), Masters (n=3) or 3-year Bachelor degree plus a Diploma of Education (n=7).

Individual level factors perceived by teachers to influence student academic achievement included teacher content knowledge, expectations, passion and enthusiasm for teaching physical education. Additionally, teacher perceptions of their own ability to select appropriate teaching methodologies to engage students and the use of reflective practices to inform teaching were identified by teachers as important aspects contributing to student academic success.

At the social level, the value of knowing your students, developing a good rapport and building strong student-teacher relationships were perceived by teachers as important attributes to the overall success of students in VCE Physical Education. Moreover, teachers also identified student access to the teacher and teacher availability outside of class time as important to student success. At the social level teachers also recognised the value of colleagues, both within the Physical Education faculty and the broader school community to support, share and assist in improving academic outcomes for students.

Policy and physical environmental level factors were generally perceived by teachers to be influences on student academic achievement beyond their control. The availability of adequate or suitable facilities and resources, professional learning policies and timetabling issues, were perceived by teachers as limiting factors to student academic success.

The transcribed data collected from the focus groups provided rich contextual information that at times overlapped several themes. The results presented in the following sections include direct quotes from teachers that have been selected to highlight the dominant theme that emerged from the data.

### Individual Level Factors

At the individual level, four dominant themes emerged from the teacher perceptions of what teachers can do to make a difference to student academic performance. Teachers reported the importance of having 1. strong content knowledge, 2. high expectations, 3. passion and enthusiasm for teaching physical education and 4. the value of using reflective practices to inform teaching. There was clear evidence in teacher responses of the interrelated nature of each of the identified factors at the individual level. Teachers often reported how content knowledge was linked to passion and enthusiasm for different content areas. Teacher content knowledge, or lack of was perceived to influence student performance:

*I also think if students feel you are very confident with the material and the course, then that fosters confidence in them. (male teacher, 22 years VCE PE teaching experience, non-government school)*

And alternatively:

*And I think this might reflect my weaknesses as a teacher, but certainly energy systems is where my passion is and I can reflect on my past experiences or relate it to elite athletes in different events that the kids might be interested in so I find that easier to engage them, whereas maybe with the SEM (social ecological model) because it is a newer area, I admittedly aren't as strong I suppose in delivering that content. So I think that also has an impact as well. (male teacher, 22 years of VCE PE teaching experience, non-government school)*

Teachers articulated how personal strengths in content knowledge often influenced teaching and the enthusiasm and passion they conveyed to students.

*I've found the community health, social-ecological model quite dry. In the sense, I haven't mastered it but if we get on to acute responses or physiology I can teach that with a lot more passion, that's just my personal interest. (male teacher, 2 years of VCE PE teaching experience, non-government school)*

*I really think the key to successful teaching of VCE PE is passion. They have got to have a teacher who is passionate and believable, my kids trust me, they know I am working hard with them so it is a real partnership and it is mutual respect. They go through tricky times, I go through tricky times, it's like, we all work together but yes, I think passion really sucks them in. (female teacher, 10 years of VCE PE teaching experience, government school)*

Teachers reported that having high expectations for students was important in influencing student academic performance:

*That (having high expectations) is probably number one, we have incredibly high expectations in everything. Homework, practical work, whatever it is, high expectations, so yes, and that starts in Year 10. (male teacher, 4 years of VCE PE teaching experience, non-government school).*

Teachers in the focus groups attested to the importance of using reflective practices to inform their teaching. Teachers reported using surveys, assessment data and feedback from students to gain information to use to improve the effectiveness of their teaching at this level.

*I actually did some research with my kids at the end and asked them some surveys about my teaching...I asked them about my style of teaching because I don't use PowerPoint's at all and they said they preferred that I didn't. (female teacher, 20 years of VCE PE teaching experience, non-government school)*  
*Yes I definitely do (use assessment data), I'll have a look in the areas, particularly the Victorian Assessment Software System (VASS) data, I will have a look at the areas where as a class they (previous years cohort of students) have not done very well and I assume that possibly it is me not getting the*

*information across and teaching it correctly so I'll go back and look at the way I teach that particular area so I find it really useful. (female teacher, 7 years of VCE PE teaching experience, non-government school)*

### **Teaching Strategies**

Teachers in this study reported using a broad repertoire of pedagogical approaches to improve student academic performance in VCE Physical Education. The perception held by all teachers involved in this study was that to help students learn, to help overcome areas that are challenging to students, a variety of strategies is required. Four dominant teaching strategies emerged from teacher responses: practical work, use of information and communication technologies (ICT), real-life examples and exam preparation strategies.

### **Use of Practical Work**

Teacher perceptions of the purpose of practical activities were consistent across all focus groups. Practical activities were intended to enhance understanding, reinforce key learning and to apply theoretical concepts within the context of physical activity. Teachers revealed that practical work engaged, enthused and motivated students. Teachers provided examples of practical activities that were completed in the classroom, gym or oval and included activities that ranged from 30 seconds to 90 minutes. Teachers on the whole reported that learning through doing allowed students to visualise, feel and remember a concept.

*Good practical activities that then provide a springboard to the theory, so you are embedding the practical work, which a lot kids enjoy, they are kinaesthetic learners, they are visual and then bringing back to the theory room.... practice informing the theory. (male teacher, 25 years of VCE PE teaching experience, government school)*

The use of practical work was seen as an important influence on student academic performance in the written assessment tasks.

*If you can relate the practical work that they do to the theory that they do I think it paints a better picture for them in terms of their understanding. So where possible if you can apply the practical, do the practical, so an ice bath for example, then you would hope that they would remember that if they are asked a question about that in a paper (examination). (female teacher, 3 years of VCE PE teaching experience, non-government school)*

Some teachers reported perceived barriers to teaching through practical activities including time pressures, limited opportunities and facilities (space). The strong impression given by those teachers who reported time as a barrier to the inclusion of practical work, overwhelmingly said that with more time, there would be more practical work undertaken. One teacher (male teacher, 9 years of VCE PE teaching experience, government school) suggested that he was “trying to do the right thing” but there was a lack of accountability for teachers to do practical work in VCE Physical Education.

*We don't do a lot (of practical work). It's just time, we find that we just can't fit it in if we need to get through the entire curriculum. So we do the essential ones, the ones that are needed for the SAC's and we try to do a couple of extra ones, we do other practical work, but we could be doing a whole lot more. (female teacher, 7 years of VCE PE teaching experience, non-government school)*

### *Use of ICT in the Classroom*

Teachers in this study reported using technology in multiple ways, including as a teaching tool and as a means of communication. ICT applications included use of apps, computer software programs and interactive DVD's that were accessed on a range of devices including smart phones, tablets, laptop and desktop computers. Teachers suggested that the use of ICT was important in engaging students, having quick access to visual stimulus, measurement tools, discussion starters, real-life examples and providing students with access to further resources.

*We use the time motion app. When they are collecting data, doing analysis, you can just say ok, the player is walking, now they are running, now they are sprinting, they are back to walking. And it is really good if the kids go and watch a footy game, they can watch the player and all they are doing is this (using the app), rather than, ok, stop watch and running and resting and they can get a little bit more information and they can bring that into their SAC a bit more. (male teacher, 2 years of VCE PE teaching experience, government school)*

Many teachers reported the use of an on-line learning management system where they could load resources, practice assessment tasks, hand-outs and lesson plans. While the majority of teachers suggested students had embraced on-line platforms, this was not the case for all teachers.

*I used Edmodo, to upload things and have extra resources and I would have had probably seven out of my 35 students that got any use out of that, but only seven. (female teacher, 9 years of VCE PE teaching experience, non-government school)*

### *Relating Concepts to Real-Life*

Most teachers made reference to using real-life examples that linked to student interest to deliver concepts. This was closely linked to themes of engaging students in their learning, knowing their students and making the content relevant.

*You can actually be quite lucky, you quite often get some of the kids who are actually still playing sport out there who come into your PE class so you can use their background and that's pretty good, you know you can say, well you are a rugby player, or you are a midfielder in soccer and you say (to the students), think about the energy systems you will be using. That helps; so I find that with your cohort, but then you can get a cohort of kids that aren't playing any competitive sport and you can't sort of draw on that background, so you are sort of stuck. (male teacher, 3 years of VCE PE teaching experience, government school)*

Making connections between the content and what students are seeing in the popular media and was also perceived to be an effective strategy:

*I think also the real life examples are good, for example, this year, performance enhancing drugs for example, was an area that I think students really took an interest in because they were seeing it in the newspaper and hearing about it, so I find that useful to keep an eye out for what is actually happening and try and relate it. (male teacher, 3 years of VCE PE teaching experience, non-government teacher)*

However, one teacher acknowledged there are constraints around using this method:

*They (the students) don't really get a chance to explore in depth or take time to have a look through a few newspaper articles and stuff because you are just*

*bang, bang, bang and whatever and they will pick up on anything you say, like you will sit there and you will say, oh Lance Armstrong..... and they will grab it but you would like them to have the chance to sit down and have a flick through and say I see what you are talking about, but it just doesn't happen. (male teacher, 19 years of VCE PE teaching experience, government school)*

### **Preparing for the External Examination**

When asked to consider how teachers prepared students for the internal and external assessment tasks, teachers consistently cited 'practice' strategies. Providing students with opportunities to practice responding to examination style questions was perceived to be an important influence on student academic performance. Teachers across all nine focus groups reported using practice examination papers and past VCAA examination papers. Examination questions were routinely referred to throughout the year, with greater emphasis on 'doing' practice papers prior to the end-of-year external examination.

*Yes, I like to give them the exams, past exams and refer back to them all the time. We might be doing energy systems or even fitness components or fitness testing and I will go, this is the sorts of questions they have had and so they get an idea of what to expect or how questions could be worded, so they have to interpret and come up with their own response, so yes I find that is important, going back to past exams. (male teacher, 3 years of VCE PE teaching experience, government school)*

In contrast, one teacher was adamant that an external examination didn't influence how they taught:

*No. I think that I'm just passionate about what I teach and so I try and bring my passion, and my students do lots of track and field stuff, to the classroom, so my passion is for them to learn. (female teacher, 20 years of VCE PE teaching experience, non-government school)*

Other strategies used by teachers that they perceived beneficial in preparing their students for the examination and ultimately improving academic performance included attending revision seminars, writing their own questions, marking their own work based on exemplar responses and developing examination strategies. Those teachers who had experience in assessing the external examination felt that this experience was invaluable and possibly the 'best professional learning' and an important aspect influencing student academic performance in VCE Physical Education.

### **Social Level Factors**

#### ***Student-Teacher Relationships***

Teachers conveyed their perception of the importance of knowing their students and how student-teacher relationships are 'key' to effective teaching. Teachers reported using different practices such as surveys, coaching sports teams and interactions with students outside the classroom environment to build relationships with students, which then influenced teaching practices used, particularly in relating concepts to student experiences.

*The type of students we get in our class will change the way that I teach. I do surveys and stuff like that at the start of the year just to see what their interests are and try and structure it (teaching) around that rather than my own examples that I might have. (male teacher, 2 years of VCE PE teaching experience, government school)*

Teachers in each of the focus groups identified the student-teacher relationship as an influential factor in academic success and that knowing their students impacted on teaching effectively. Teachers linked knowing their students with engagement. The following comments typify teacher responses:

*We do a very similar thing to that (ask students what sorts of sports they play) as well so we know exactly where we are going to be picking up on their interests and they do definitely seem more engaged if you are focussing on what they are interested in rather than I guess just what you are. (female teacher, 7 years of VCE PE teaching experience, non-government school)*

Other relational aspects of the student-teacher interaction included relating examples to student interests, sporting activities and real-life experiences of the students, developing a rapport so students felt comfortable asking for assistance and getting the best out of each individual student.

*You have to motivate each of them (the students) separately, their own way and that whole idea about one of them might need some tough love and the other one needs a cuddle, it's about, I think, with everything it is about relationship building and I think you can't teach them, and it doesn't matter, you can walk into a class and be the smartest, have the most content (knowledge), if you don't build relationships first that's (in) every classroom, but Year 12 is no different, you walk in, you spoke about trust, that's it, you are building relationships. (male teacher, 8 years of VCE PE teaching experience, government school)*

*You need to get to know your students and what works best for them, so how do you do that? You try and mix up your activities early and see what works and I try and get as much informal feedback as I can from the students, so just through surveys and what they are enjoying doing, what they are not enjoying, just to get some feedback. (male teacher, 4 years of VCE PE teaching experience, non-government school)*

### *Colleagues*

A majority of teachers, when asked where do you go to access information or seek support for your teaching of VCE Physical Education, reported that colleagues were the most readily accessed source of advice. Sharing of ideas and resources and seeking assistance or clarification of VCE Physical Education requirements were the main reasons teachers referred to colleagues, both within their own school and externally through personal and professional networks and cluster arrangements. Teachers reflected on the benefits of teaching in a faculty as opposed to being the only VCE Physical Education teacher in a school.

*We bounce off each other as well, it's nice having that, I suppose, reaffirming that what you are doing is right, or how you are doing something and just sharing resources, it is good like that. (female teacher, 2 years of VCE PE teaching experience, non-government school)*

A number of teachers believed that being able to watch others teach, "I'd love to watch other people teach" (male teacher, 2 years of VCE PE teaching experience, government school), talk to other teachers and share ideas would be highly beneficial to their own teaching:

*I find that my teaching improves when I see other people teach in a similar area to me. I find that to be really beneficial, that's another way I suppose, not so much data but using collegial observations as a way to improve your own*

*teaching. (male teachers, 22 years of VCE PE teaching experience, non-government school)*

*I think definitely (watching others teach), ideas from other staff members that teach VCE would definitely revitalise if I have been teaching the same thing for a couple of years in a certain way just to get a different perspective on it.*

*(female teachers, 7 years of VCE PE teaching experience, non-government school)*

### **Teacher Access and Availability**

Student access to their teachers was perceived to be an important factor influencing student academic achievement for teachers in all focus groups. Teachers revealed multiple strategies to increase the access students had to them, including at lunchtime, before and after school, during holidays and weekend revision sessions and one-on-one sessions.

*I do morning classes (7.30am) and the incentive is I will bring breakfast. (male teacher, 3 years of VCE PE teaching experience, non-government school)*

*I run two lunchtime classes, so two lunchtimes a week I am sitting in a particular room and they come, a lot will just come and do homework to catch up, for them it is a forced way of studying and I don't make them, actually, if you have failed a SAC you do have to come, so that's good as well, so kids who may be afraid of asking for help in front of everyone else will do it then they know where I am going to be. (female teacher, 10 years of VCE PE teaching experience, government school)*

In addition to face-to-face access, teachers conveyed the importance and ease of access students had via electronic media. There was great diversity in the platforms used by teachers and students to communicate and across the perceptions of appropriate forms of communication. Some teachers were happy to provide students with mobile phone numbers and communicate directly with students in this manner:

*I have their mobile numbers and I regularly just text them and that works. (female teacher, 20 years of VCE PE teaching experience, non-government school)*

Some were restricted by school policy:

*I would have no hesitation to giving my number out, but we are not allowed. (male teacher, 6 years of VCE PE teaching experience, non-government school)*

Others were adamant that it was not a suitable form of communication for them.

*Wouldn't touch it (giving students mobile phone number) with a barge pole! (male teacher, 9 years of VCE PE teaching experience, government school)*

Teachers consistently cited email as an appropriate form of access and many verbalised the tensions between being available to students and setting appropriate boundaries for responding to emails:

*I'll often be answering students email questions on weekends or whatever. (male teacher, 6 years of VCE PE teaching experience, non-government school)*

*It is a 24/7 job now, they email all the time and you get back to them all the time. (female teacher 4 years of VCE PE teaching experience, non-government school)*

*Anyone who has got a smart phone has their email on their phones now so you are not a teacher from 9am – 3pm, not that I think you ever were, but you are certainly at 10pm, 11pm or 12am at night still getting emails. I have to stop myself from replying, because I will check them and so I think there is this huge*

*overlap between life and work absolutely with regards to technology. (female teacher, 3 years of VCE PE teaching experience, non-government school)*

Teachers had different perception of the use of intranets and educational platforms such as Moodle™ or Edmodo™. Some teachers used them extensively and others reported that students did not access these sites and preferred to use a tool such as Facebook™ or Twitter™ that students were more likely to engage with.

*I have a Facebook™ group with my students, similar to Edmodo™ but I am not actually friends with them on Facebook™ and I only do it with my Year 12 students and they are very aware of what's acceptable and not, they don't click on anything of mine or anything but it pretty much gives them access to ask questions, almost 24/7. I find the kids are pretty hesitant with email, it means you know, opening the email up, but they are on Facebook™ as it is so just quickly open that group page and that's all it is a group page and shoot off a note, a question and I find they answer each other before I get a chance to get to it which is really effective. (male teacher, 3 years of VCE PE teaching experience, non-government school)*

The majority of teachers agreed that electronic communication was beneficial for ensuring information was conveyed to students, particularly when a student or teacher had been absent from class and the strong impression given by teachers was that electronic communication was seen as a positive influence on their ability to improve student academic performance in VCE Physical Education.

#### **Policy Level Factors**

##### ***Time***

A strong perception held by a majority of the teachers involved in the focus groups was that there was a lack of time available to deliver the content stipulated in the official curriculum document. Problems identified by teachers that further compounded the issue were students missing class for a wide variety of school based activities.

*It (lack of time) affects us massively and I'm sure it affects everyone. I would certainly prefer to put more practical work into it but sometimes you turn around and say we just have to get through this content. The school where I am at, we seem to miss out on a lot of classes, it is probably happening everywhere of course, but there are Masses and all sorts of things, seminar days that students are out of class, so it is that time constraint. (male teacher, 6 years of VCE PE teaching experience, non-government school)*

Further, teachers reported that time to prepare, develop and reflect on lessons is limited and they perceived that this impacted on their ability to plan engaging and creative lessons for their students.

*For me it is time, always wanting to put more time into lesson planning and so that is the biggest constraint, absolutely. So therefore if I was teaching less, just one less class, and say have three extra periods to put more time in. (female teacher, 17 years of VCE PE teaching experience, non-government school)*

Some teachers who held positions of responsibility within their school felt that the responsibilities of their role often detracted from their classroom teaching.

*When you have a position of leadership, teaching is your second priority; it is never your first priority. I don't apologise for that because I don't think it can be and I know that it is really sad but its reality and a lot of people end up stepping out of positions of responsibility to concentrate on their teaching again, and I have no doubt I will go for that and I will be a hands down better teacher than I*

*am currently. (female teacher, 4 years of VCE PE teaching experience, non-government school)*

### **Professional Learning Opportunities**

Teachers perceived that professional learning opportunities were reaffirming, provided new ideas and ensuring content knowledge was up-to-date. Staying current with new ideas so that the delivery of content is not stale was at the forefront of responses. One teacher (female teacher, 9 years of VCE PE teaching experience, non-government school) succinctly stated: *“I know the content, tell me what to do with it”*. Others reflected on the benefits to their teaching:

*Sometimes I can get a bit, personally I can get very narrow minded, I’ve been doing it this way for so many years, I’m going to keep doing it and when you bring something fresh and new, kids just love it. That’s something I have learnt this year, make sure you keep updating yourself. (female teacher, 6 years of VCE PE teaching experience, non-government school)*

A number of teachers reported policy level barriers to attending professional learning opportunities, including not being supported to be released from classes to attend, costs associated with attending and time away from class.

### **Physical Environment level factors**

#### **Facilities and Resources**

Most teachers agreed that having facilities and resources available to teach influenced how they taught. For some teachers, the school in which they taught didn’t have the physical resources required, for example a gym or an oval. The following statement reflects a common response from teachers when asked about the impact of the lack of facilities on the planning and delivery of VCE Physical Education:

*Absolutely (it affects the way you plan, and deliver), because you have got to make modifications and of course you want to make it as practical as possible but if you are varying it that much it is so difficult it becomes sometimes pointless, sometimes it’s just not worth the effort in some cases. You try and be flexible about it but...It’s just the facilities in general, funding is not an issue but just having the space available more than anything. (male teacher, 3 years of VCE PE teaching experience, non-government school)*

However, a far greater barrier was access to the limited facilities available. Limited access to suitable facilities was perceived by teachers as a barrier to effective teaching epitomised by the following statement: *“I’m never timetabled in the gym, we have only got one so I just have to find a space somewhere to do that (practical work).”* (male teacher, 8 years of VCE PE teaching experience, government school). In contrast, one teacher reported that *“You don’t need facilities, you just need a classroom”* (male teacher, 4 years of VCE PE teaching experience, non-government school), and another *“We don’t have accelerometers but we have pedometers so we make use of what we have got”* (female teacher, 17 years of VCE PE teaching experience, non-government school). Teachers, in particular those from government schools, commented on the impact a lack of funding has on providing resources for students including buying and printing practice exams, text books and other resources to support student learning. Teachers discussed a variety of strategies to overcome the perceived barriers such as running classes in ‘period 0’ or ‘period 7’. Essentially running classes before the school day starts and after it ends. Others reported utilising external providers to *“show*

*the kids what to aspire towards and also increase their understanding of course work”* (female teacher, 10 years of VCE PE teaching experience, government school), however, teachers in some schools said that access to external providers was limited due to the associated costs.

## Discussion

Teacher perceptions of factors they perceive as influential to their students’ academic achievement in VCE Physical Education are consistent with previous research that reflects effective teaching in general. Influences on teacher behaviours that may impact on student academic performance in VCE Physical Education are multidimensional and are characterised by interrelationships between the four levels of the social-ecological model. Teachers in this study perceived that their content knowledge, passion, enthusiasm and high expectations were important individual level influences on their students’ academic performance. Additionally, teachers perceived that the use of reflective practices, multiple and diverse teaching strategies, knowing their students and teacher accessibility facilitated improved student academic performance. Teachers perceived some policy level and physical environmental factors as barriers to teaching VCE Physical Education in what they perceived to be an effective manner. The social ecological model provided a useful conceptual framework (Reeves, Albert, Kuper, & Hodges, 2008) to explore these multiple influences on teacher behaviour and allowed for the classification of the teacher-related factors perceived by teachers to be important for student academic performance in VCE Physical Education. The influences on teacher behaviour are interrelated and it is not meaningful to discuss the factors in isolation. For example, teachers who identified that they had high content knowledge in one area of the course often described it as an area they were passionate about and that this in turn allowed them to use more real-life examples that engaged students in their learning.

Teacher content knowledge was perceived to be imperative to facilitate positive student outcomes, which supports previous research in senior-secondary education (Ayres et al., 2004) and more specifically in physical education (Cothran & Kulinna, 2008; Iserbyt, Ward, & Li, 2015; Morgan & Hansen, 2008). Ward (2013) has proposed that teachers who hold deeper content knowledge construct higher quality learning tasks for students as they have deeper understanding of the content. Teachers in this study believed that content knowledge influenced how they taught. *“As people, we put more into what we like and enjoy, and put more time into what we know best. Where your own personal preference or greater understanding or interest lies, absolutely comes across.”* (female teacher, 4 years VCE PE teaching experience, non-government school). Pedagogical content knowledge, according to You (2011) is more important than subject content knowledge and pedagogical approaches utilised by teachers recognise that how one teaches is inseparable from what is taught, how and what is assessed and how students learn (Penney et al., 2009). Teacher pedagogical content knowledge has been shown to enhance student learning (Stronge, 2007; Wenglinsky, 2002) and having a broad repertoire of teaching strategies from which to select an ‘optimal’ method for the cohort, the content and the task. Pedagogical content knowledge is specific to the context in which teaching occurs (Shulman, 1987) and the teachers of senior-secondary physical education in this study suggested that their content knowledge was sufficient yet greater attention was required to develop specific pedagogical knowledge, how to deliver the content, if they were to further improve their students’ academic performance. Teacher content knowledge in school physical education has at times been questioned (Siedentop, 2002; Ward, 2013), although this has been specifically in a context where psychomotor

learning outcomes are prevalent. In senior secondary, this may not be the case, and improved pedagogical content knowledge of teachers may have the potential to engage students in their learning and improve their academic performance.

Teacher attitude toward the subject and the student facilitates student learning (Tinning, 2002). Within the context of this study, teachers identified that passion and enthusiasm may influence student academic achievement. This is consistent with educational research in a range of different settings (Rowan, Chiang, & Miller, 1997; Smyth & Banks, 2012; Walls, Nardi, von Minden, & Hoffman, 2002) and specifically in senior-secondary education (Ayres et al., 2004; Horsley, 2012). The enthusiasm ‘factor’ has been shown to increase student achievement (Darling-Hammond, 1999; Stronge, 2007) and findings from this study support the idea that teachers believe that enthusiasm and passion engage students in their learning. Student engagement with their learning has been shown to have positive effects on academic performance (Dogan, 2015; Lee, 2014). Specifically in senior-secondary physical education, students who were highly motivated and engaged with the learning task performed better on written assessment tasks (Thorburn, 2003). Teachers of senior-secondary physical education reported that student engagement often influenced the choice of learning activities and teacher perception was that content that didn’t engage students was more challenging to teach. However, some teachers took greater ownership of the issue and suggested that because they were not as enthusiastic and passionate about the content, they were not able to deliver the content in a manner that engaged students.

Student engagement and motivation through interactions with the teacher has also been identified as a potential mediator of academic outcomes (Allen, Pianta, Gregory, Mikami, & Lun, 2011), making this an important teacher-related factor when considering academic achievement in secondary education. VCE Physical Education students reported the importance of the student-teacher relationships (Whittle, Telford, & Benson, 2015) on their academic performance and similarly teachers in this study reported that knowing your students and developing a relationship was paramount to academic success. This supports previous research with primary school teachers (Grieve, 2010) who rated positive student-teacher relationships as characteristics of ‘excellent’ teachers. Teachers in this study suggested that developing strong relationships with students impacted on the effort students exert toward their study of physical education, a finding supported by previous research in primary (Wentzel, 1997) and secondary education (Beishuizen, Hof, Van Putten, Bouwmeester, & Asscher, 2001) that identified relational aspects of good teachers. The findings of this research are comparable to previous research that has identified the importance of student-teacher interactions on academic achievement (Allen et al., 2011) regardless of the content area of instruction. Teachers in this study articulated that the development of trust within the relationship impacted on students meeting their expectations. *“I think with everything it is about the relationship building and I think you can’t teach, and it doesn’t matter, you can walk into a class and be the smartest, have the most content (knowledge), if you don’t build that relationship first, and that’s every classroom, but Year 12 is no different, you walk into, you spoke of trust, that’s it, you’re building relationships.”* (male teacher 8 years VCE PE teaching experience, government school). Teachers in this study felt that having high expectations for students influenced academic achievement, as it was a motivator to ensure that students worked hard, completed and submitted tasks on time, and did their best. These findings support those of Wentzel (1997) and Stronge, Ward, and Grant (2011) who have previously shown the association between high teacher expectations, effective teaching and increased academic achievement, specifically in senior-secondary education, is critical to student success (Horsley, 2012).

Expectations were perceived to be reciprocal by teachers in this study. The notion was very much of a team approach to a common goal and to assist students in achieving this goal

teachers believed students needed access to them, predominately electronically but also in person. Teachers made themselves available to their students beyond the scheduled class time through extra classes, formal and informal meetings and via electronic communication platforms, and for some almost 24/7. Teacher availability has been previously linked to student–teacher relationships (Ayres et al., 2004) and teacher support has been shown to facilitate high academic success (Horsley, 2012). Teacher availability and access, particularly through electronic media, was perceived in this specific context to be highly desirable. Students of VCE Physical Education reported that being able to access teachers influenced their academic success (Whittle et al., 2015). Teachers have previously suggested electronic communication to be time effective and a suitable form of contact to support effective learning (Hwang & Tsai, 2011). However, many teachers in this study were torn between supporting students and having the capacity to ‘switch off’. *“All our kids have our email, you would answer 2 or 3 emails at night. Like last night, on Sunday, I had a kid just email me saying they had left their practice SAC at school, can you email it to me, so you just email it to him and he still able to do it.”* (male teacher, 4 years VCE PE teaching experience, non-government school). This is an emerging issue in education, identified here specifically in the context of senior-secondary physical education. Understanding if this is an issue limited to courses with high-stakes assessment warrants further investigation. Future school-policy may well dictate appropriate windows of time for teachers to respond to student queries that are delivered electronically to ensure work: life balance and appropriate expectations are able to be established.

A broad repertoire of teaching strategies is essential for effective teaching (Cothran & Kulinna, 2006; Duffy & Elwood, 2013; Grieve, 2010; Jaakkola & Watt, 2011; Kulinna & Cothran, 2003), and no one pedagogical approach is going to be universally effective for all students in all situations (Rink, 2001). Students learn in multiple ways (Jess, Atencio, & Thorburn, 2011) and teachers in this study perceived that their ability to draw on their pedagogical repertoire and use a variety of teaching styles to cater to student needs facilitated improved student academic performance. Teachers in this study identified numerous teaching strategies that maximised learning time in class such as questioning, discussions and practical work. Similar to those teaching senior-secondary physical education in Scotland (Thorburn, 2003; Thorburn & Collins, 2006), the prescribed (Victorian Curriculum and Assessment Authority, 2010) integration of practical work with content or subject matter knowledge learning has proved difficult for teachers of VCE Physical Education, yet they acknowledged that it was important. *“If I can make the content as practical as possible I find they (the students) pick it up and make it their own very quickly and if we can put it into a context they actually know, so we use sports that they do and I think that suits our students very well.”* (male teacher, 29 years of VCE PE teaching experience, non-government school). In VCE Physical Education, as in senior-secondary physical education in Scotland, and perhaps in other examinable senior-secondary courses, the intended integration of theory and practical work may be in reality a dichotomous split. While the value of learning through practical activities was perceived to be important, practical work was often ‘sacrificed’ by teachers to devote more time to covering content. This ongoing tension may reflect the lack of accountability to governing authorities mandating the amount of practical work undertaken in VCE Physical Education. The perception held by teachers that the purpose of practical work in VCE Physical Education was to reinforce, cement or support learning of theoretical concepts. This suggests that teachers felt that content needed to be ‘taught’ first and experienced second and learning of content didn’t occur through the practical experience. Teachers in Scotland (Thorburn, 2003) had similar concerns, identifying that students don’t make the connections between practical learning tasks and the underpinning content knowledge. This presents teachers of senior-secondary physical education with a conundrum:

how do I incorporate practical learning activities that result in the desired learning outcomes that are expressed in written tasks? Creating rich, authentic learning environments is important for student engagement in physical education where learning should be occurring *through* movement (Arnold, 1979). Teachers in this study suggested that all practical activities had a purpose. The effectiveness of a practical experience is reduced when students cannot make the connection between what they are experiencing and the underlying theoretical concept. The practical activity must have an explicit plan of how students are expected to learn and what they are expected to learn from the activity; it cannot be assumed that the ideas to be learnt will emerge from the experience (Abrahams & Millar, 2008). Teachers in this study generally spoke of practical activities as a trigger for students to recall or remember a concept. The effectiveness of practical activities may be enhanced through improved design and implementation.

Teachers in this study articulated the importance of the connected experience when they referred to using real-life examples. The use of real-world examples can provide students with opportunities to apply knowledge to tangible experiences relevant to themselves. This supports the findings of McIntyre, Pedder, and Rudduck (2005) and proponents of complexity pedagogy (Jess et al., 2011; Ovens, Hopper, & Butler, 2013) where students learn through dynamic engagement with content knowledge. Teachers felt that real-world examples engaged students through situating the content in contexts that students could relate to.

Teaching strategies that utilised ICT were associated with student engagement by teachers in this study. The visual stimuli accessible through online sites allowed teachers to quickly and easily show students an example to demonstrate the topic being taught. Online learning platforms provided teachers with a location to store worksheets, assessment information, lesson activities and further resources that were easily accessible by students. The degree to which students accessed online educational platforms was debated amongst teachers within the focus groups, with suggestions that if students are to access the information provided electronically, it needed to be through a forum that they are more likely to engage with. Using non-school platforms to communicate information to students may in the future, warrant further investigation.

High-stakes examinations can lead to narrowing of the curriculum and teaching to the 'test' (Macdonald, 2011; Rink & Mitchell, 2002). Teachers spoke specifically about preparing students for the external examination in VCE Physical Education through practice questions and exam strategies and techniques. While teachers perceived this to be an important practice influencing student academic achievement, the desire of teachers to engage students in their learning through authentic tasks suggests they are striving to teach for understanding rather than to the test. In a similar context to this study, Ayres et al. (2004), found that teachers of high-stakes external exit examinations in New South Wales, Australia, focussed on 'generating interest in and understanding of the subject' (Ayres et al., 2004, p. 141). Yet exam-driven pedagogy is not always perceived negatively. Senior-students in Ireland (Smyth & Banks, 2012) reported exam-focussed teaching strategies as 'good teaching' and Chinese teachers identified exam-driven pedagogy as one aspect of effective teaching (Chen, Brown, Hattie, & Millward, 2012). High-stakes assessment such as the external examination certainly guided the classroom practices of teachers in this study by reinforcing student application of knowledge with exam type questions a focus of some of the teaching strategies used.

Teachers in this study reported using several different reflective practices to monitor their teaching, collect evidence to develop understanding and inform their teaching for the future. Similar to previous research (Stronge, 2007) teachers believed that this was an effective way to enhance student learning. Reflective strategies used by teachers were both

informal and formal. A common practice involved analysis of student examination data provided by the VCAA via the VASS system. Teachers viewed the (poor) performance of students in some areas of the course to be a reflection on their teaching rather than the student (Gipps, 1994). This reflection and assessment of the effects of what is done in the classroom can be used to refine and improve instruction in the future.

Policy level factors reported by teachers were generally perceived as barriers to improving student academic performance. Time was by far the greatest perceived barrier to a teacher's ability to influence student academic performance. Time to deliver content, time to do practical work and time to plan and prepare. The time constraints teachers perceived to 'get through' the content impacted on the teaching strategies used and the amount of practical work undertaken. When teachers perceived they were 'running out' of time they were more likely to revert to teacher-centred teaching strategies such as direct instruction. Assuming greater control around all decisions made relating to tempo, sequence and content, teachers could 'get through' the theory to ensure that the course content was covered. Professional learning policies in some schools limited the access to regular professional learning for some teachers. While others reported a conflict between staying current, (by attending professional learning opportunities), and being in front of their class to teach their students. Overwhelmingly teachers said that their colleagues were the best source of professional learning. For the majority of teachers in this study colleagues were perceived to be supportive, provide mentoring, share ideas and resources and provide advice around the content and assessment of VCE Physical Education. Teachers spoke specifically about the perceived benefit of being able to watch colleagues teach and how this would be a highly desirable professional learning opportunity.

Teachers perceived that factors identified at the physical environment level impact negatively on student academic performance. Teachers reported lack of access to facilities as well as lack of facilities, lack of funding to purchase resources and unreliable access to technology in the classroom. Barriers at the physical environment level influenced teacher behaviour at the individual level. For example, lack of facilities and resources impacted on the pedagogical choices made teachers. These findings are not dissimilar to the 'institutional' barriers perceived by teachers in primary and secondary school physical education programs that focussed on practical skill development (Jenkinson & Benson, 2010; Morgan & Hansen, 2008). This study has provided some understanding of the reciprocal relationship between the numerous factors that impact on teacher behavior, and how the teacher perceives the influence of their behavior on student academic performance.

## **Limitations**

It is important to recognise that teacher perceptions of influence on their behavior may not accurately reflect the teaching delivered. Previous research suggests that teachers may say one thing but do another (Capel, 2005). SueSee and Edwards (2011) found that teachers reported using a variety of teaching styles to teach senior-secondary physical education in Queensland, Australia yet this contradicted the findings of classroom observations. A limitation of the present study was that the teaching practices of the teachers were not observed and therefore could not be validated. Although the teachers in this study were considered a diverse sample of the total population, including three different school sectors across metropolitan and rural Victoria, perceptions of teachers delivering senior-secondary physical education courses nationally and internationally warrants further research. This study utilised a purposeful sample (a group of individuals that are experienced and knowledgeable about the area of interest), a widely used and appropriate technique in

qualitative research for the most effective use of limited resources (Barbour, 2005). Additionally, participant availability and willingness to participate (Palinkas et al., 2015) was considered an important factor, resulting in focus group participants essentially self-selecting into the study. Focus groups have a tendency for socially acceptable opinions to emerge (Smithson, 2000), and it is noted that teachers comments may reflect what is assumed to be good teaching within the educational field. The transcribed data from the focus groups is acknowledged as a partial data source as conveying of participants meaning, emotions, reactions humor or hesitations is difficult (Cope, 2009). To minimise errors and capture the data consistently the focus groups were conducted by a trained facilitator and transcribed by one researcher. Additionally, non-verbal elements were recorded through written notes and annotations. The limitations of the study are acknowledged and some degree of caution is required when any attempt to generalise the findings is made. However, in the specific context of VCE Physical Education, little research has been conducted into the teacher-related factors that may influence student academic performance, and the findings from this study may inform the development of programs for pre-service teachers and professional learning for in-service teachers to support teachers to maximise the academic performance of their VCE Physical Education students.

### **Implications for Teacher Education**

An awareness of teacher perceptions of influences on student academic performance in VCE Physical Education may be beneficial to both in-service and pre-service teachers. Pre-service teachers aspiring to teach senior-secondary physical education and in-service teachers wanting to maximise the academic performance of their students may benefit from the insight from this study and potentially implement some of the strategies suggested in their teaching.

Teachers identified important influences about student academic achievement that provides a specific focus for physical education teacher education courses and professional learning opportunities for teachers. Opportunities to develop the capacity of teachers to draw on a diverse range of teaching practices that include practical activities with learning outcomes linked explicitly to the key knowledge and skills required in senior secondary physical education is important.

Additionally, building teacher capacity in the affective domain may improve student-teacher relationships, provide positive learning environments where teachers have high expectations for students and demonstrate passion and enthusiasm for the content being taught.

The findings of this study support the need for professional learning opportunities for in-service teachers that are time and cost efficient while meeting the needs of the teacher. Findings of this study suggest that opportunities to watch other senior-secondary teachers teach within different school settings is perceived as beneficial to VCE Physical Education teacher development. Physical Education teacher preparation programs need to ensure that pre-service teachers are exposed to teaching strategies that allow for the integration of practical and theoretical concepts. In this way, the specific influences on effective teaching in senior-secondary physical education as recommended by teachers can be combined with those skills already included in teacher training programs to assist teachers maximise their students' academic performance in senior-secondary physical education.

## Conclusion

This study sought teacher insights into how they perceived they influenced their student's academic performance in senior-secondary physical education, specifically in the context of VCE Physical Education. From a social-ecological perspective, multiple factors of influence on teacher behaviour were identified. How teachers operationalise the VCE Physical Education curriculum within the school setting is constrained by time, policy, resources and facilities, yet teachers reported a myriad of teaching strategies that they used to engage and motivate their students to succeed in the written assessment tasks that determine academic success in VCE Physical Education. This research identified context specific ideas of *how* effective teachers deliver particular content to their learners in a variety of settings. Some teacher-related influences on student academic performance are likely to be specific to the local context of individual schools rather than senior-secondary physical education in general. Similarities were found between previous research on student perceptions and the teacher perceptions in this study with the importance of the teacher being accessible, passionate, enthusiastic and knowledgeable identified.

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