EXAMINING THE AFFECTIVE DOMAIN IN PHYSICAL EDUCATION

by

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ABSTRACT

UNESCO (2015) outlined ambitious intentions for a broad and holistic Physical Education (PE) curriculum that facilitated student growth across four learning domains (physical, cognitive, social, and affective). However, much of what educators do tends to neglect the affective domain and prioritise the physical learning of young people. Interest in the affective domain has increased recently due to the raised awareness of mental health issues among young people, yet gaps remain in teacher understanding due to the complexity of defining, observing, and measuring the affective domain, including what practices may enable and constrain it in a PE context.

The research questions of this study intend to fill gaps in the literature by examining the affective domain in PE in an international primary school context. Addressing research questions one and two, twelve 60-minute PE lessons were video recorded at an international school in Singapore during 2020. Data were analysed using the Practical Epistemological Analysis (PEA) technique and Dewey's transactional learning theory to identify indeterminate situations related to the affective domain. Stimulated recall interviews with students provided further data to support and/or challenge the interpretations of the video recordings. Addressing research question three, nineteen interviews took place with teachers (n=11) and students (n=8) during the COVID-19 pandemic. Data were analysed using practice architectures theory to establish the facilitators and barriers to affective learning.

The findings of this study – using the PEA technique – implied teaching and learning affectively was complex and often meant students did not learn in a fixed linear direction. Affective learning was considered in this study to be the process of change in emotional, attitudinal, and motivational learning. The indicators of affective learning occurred in three indeterminate situations: 1) rules, 2) tasks, and 3) relationships. Through the lens of practice architectures modified games in the curriculum, and identifying the importance of wellbeing were considered facilitators of affective learning. However, priority for the physical domain was the main barrier to supporting the affective domain. Other barriers included: inter- and intra-sport competitions, the use of sport-specific spaces and equipment, school leader and parent prioritisation of sport.

The contribution to knowledge is therefore the novel methodological technique (i.e. PEA) adopted to develop understanding of the affective domain, the evidence of different types of pedagogical contexts that influence the affective domain, and the identification of key barriers and facilitators to the affective domain. To lead a healthy and physically active life, holistic educational outcomes need to be prioritised in PE. Consequently, it is argued in this thesis that PE can play an important role in the struggle against mental health disorders among young people. However, challenges for teachers remain in that the affective domain continues to be complex, multi-faceted, and dynamic.

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LIST OF ABBREVIATIONS

Abbreviation	Explanation
Affective Domain	The categorisation and description of different types of emotional, attitudinal and motivational learning.
Affective Indicator	Observable and measurable behaviours or outcomes related to the affective domain.
Affective Learning	The process of change in emotional, attitudinal, and motivational learning.
COVID-19	Severe acute respiratory syndrome coronavirus 2.
PE	Physical Education.
PEA	Practical Epistemological Analysis.
SRI	Stimulated Recall Interview.
TA	Thematic Analysis.

CHAPTER 1: INTRODUCTION

Research Aims and Contributions

The aim of this thesis is to examine how learning in the affective domain can be supported in primary Physical Education (PE). The focus of this study is on me as a teacher-researcher, located at an international school in Singapore. Although this study focuses on one year group (Year 2 – aged 6-7 years), my responsibilities as a teacher are for children who would be eligible for pre-primary and primary education in a UK context. The contributions of this thesis to existing knowledge and literature are:

- A novel methodological technique (i.e. Practical Epistemological Analysis) to develop understanding of how the affective domain can be defined and conceptualised in PE.
- Evidence of different types of pedagogical contexts that influence the affective domain.
- Key barriers (e.g. dominance of the physical domain) and facilitators (e.g. teacher-student relationships) are identified and critiqued.

A range of contemporary issues exist globally that directly influence children and young people; this thesis will focus on two interconnected concerns: mental health and wellbeing. Apprehension about mental ill-health has been attributed to a myriad of interrelated and multi-layered factors, including a rise in precarity (Kirk, 2023), a lack

of physical activity (Ramirez Varela et al., 2021), and changes in social connectivity (Immordino-Yang et al., 2019). These factors appear to have been exasperated during and following the COVID-19 pandemic (Meherali et al., 2021). Recent literature has demonstrated the links between mental health, wellbeing, and the affective domain in a PE context (Teraoka et al., 2020). However, the affective domain continues to be a relatively unexplored area of PE in comparison to other domains of learning, such as the physical and cognitive domains (Wahl-Alexander and Ressler, 2020).

Discussions around the affective domain in education, and its role in PE – through physical activity, health, and sport – have been discussed since the 1980's (Casey and Fernandez-Rio, 2019). Despite PE being positioned as a key influencer of the complex challenges facing young people, many scholars in the field of PE and Sport Pedagogy have argued that PE is continuing to grapple with its *reason for being* due to a lack of breadth (Macdonald, 2015) and quality (Dudley et al., 2022) in the design and delivery of teaching and learning. Consequently, what is done in the name of PE appears to have changed little since the middle of the 20th century (Kirk, 2010). Therefore, whether PE can or should integrate affective learning to contribute to mental health and wellbeing and increase the breadth and quality of PE practice is challenging and complex.

To lead a healthy and physically active life, holistic educational outcomes need to be prioritised in PE (Cornish et al., 2020). However, the physical domain has traditionally received more attention in PE literature and is also more developed in practice (Casey and Kirk, 2021b). This has created gaps in understanding about the affective domain

and how PE can support mental health and wellbeing. Specifically, a lack of conceptual understanding by teachers and policy makers has led to affect being a hoped-for by-product of PE. Similarly, there is a lack of effective tools to observe and/or measure affective learning, and a limited understanding of what pedagogies enable or constrain the affective domain in PE.

Research Questions

Three research questions were established as a focus of my inquiry, analysis, and discussion, and these reflect current gaps in the literature (that are detailed in Chapter 2). The research questions of this study are:

1) What indicators of the affective domain are observable in a PE context?
2) What pedagogical processes influence the affective domain, and how?
3) What are the barriers and facilitators of affective learning within a PE context?

In response to these questions, the academic contribution of this thesis (see Table 17) is made up of three parts: 1) the methodological choices taken during this study to analyse and interpret the affective domain (see Chapter 3), 2) the findings that sought to address the three research questions (see Chapters 4 and 5), and 3) the conclusions and recommendations for teachers, policy makers and other stakeholders interested in educating young people and addressing mental health concerns (see Chapter 6). In

the next section I outline the structure of the thesis and summarise each chapter to provide more context to the contributions claimed in this study.

Structure of the Thesis

This first chapter has introduced the aim of this thesis and the research questions. Following this introductory chapter, five chapters make up this thesis that examine existing knowledge and understanding of the affective domain, the theoretical underpinnings of the study, the methodological choices, the findings, and the discussion and conclusions about the research.

Chapter 2. Review of Literature: I draw on current literature and enduring arguments in PE to claim that there is a need for further investigation into the affective domain. The chapter is made up of distinct parts: 1) contemporary issues facing young people, 2) health, wellbeing, and the impact of the COVID-19 pandemic, 3) the domains of learning in PE and existing understanding of the affective domain, 4) the research questions and the multi-theoretical underpinnings of the thesis, and 5) existing barriers and facilitators of PE practice.

Chapter 3. Methodology and Methods: my methodological choices are framed through a pragmatic social constructivist stance. A case study design is chosen to engage in an in-depth examination of the affective domain, that is contextualised and practical. In the methods section, details about the context and setting, participants, data

collection, and data analysis are outlined. The chapter concludes with a discussion about rigour and quality relate to this study.

Chapter 4. Practical Epistemological Analysis Results: argues that a range of affective indicators can be observed in PE practice. Addressing research questions one and two, the findings implied that teaching and learning affectively is complex and often non-linear in direction. The practical epistemological analysis (PEA) is positioned as a novel methodological technique that analyses learning in context. The indicators of affective learning occurred through physical movement, expressive feelings, and performing skills that are relevant to the activity being undertaken.

Chapter 5. Practice Architectures Results: a range of facilitators and barriers that impact the affective domain in PE were generated from individual (teacher) and group (student) interview data. Addressing research question three, facilitators included modified games in the curriculum, teachers recognising the importance of wellbeing, and the strength of relationships between teachers and students. Priority of the physical domain was the main barrier to supporting the affective domain. In addition, intra- and inter-sport competitions, the use of sport-specific spaces and equipment, and school leader and parent prioritisation of sport were identified as key barriers to the development of affective learning.

Chapter 6. Discussion and Conclusion: in my concluding arguments I answer three questions: 1) what happened? 2) so what? and 3) what now? to convey the originality, significance, and rigour of this thesis. I bring together the arguments made in Chapters

4 and 5 to outline the implications for the affective domain and steps needed to integrate affect into a holistic PE curriculum. The affective domain remains complex and dynamic, yet the observation of affective indicators and micro-interactions were possible due to the PEA technique. It is argued here that teacher education and training, a critique and review of PE policy, and continued research into the affective domain will support the broadening and diversification of the PE curriculum and influence positive changes in young people's mental health.

CHAPTER 2: REVIEW OF LITERATURE

Chapter Introduction

This chapter draws on current research literature in PE to argue the need for further investigation into the affective domain. The purpose is to present a clear argument for a fresh perspective on the affective domain in a PE context, that is grounded in one of the most prolific and prevalent issues affecting young people across the last decade: mental health and wellbeing. In addition, other core areas of discussion include: 1) the role of PE and the affective domain in addressing mental health, wellbeing, and precarity, 2) the prioritisation of the affective domain in relation to the physical, cognitive, and social domains in PE research and practice, and 3) a lack of focus on the affective domain has continued a trend of narrow conceptualisation, pedagogical misunderstanding, and difficulties for practitioners when measuring or assessing affective learning. In the final sections, I outline the research questions of the study in relation to the gaps identified in the literature and the theoretical perspectives that will support the analysis of data. Finally, key facilitators and barriers to affective learning in PE are discussed.

Contemporary Issues and Young People

Mental Health

Global challenges, including population mobility, advances in communication pathways, and economic instability, are shaping the health and mental wellbeing of contemporary young people (Marmot and Bell, 2019). Notably, there has been an exponential rise in the prevalence of non-communicable diseases (e.g. cardiovascular disease or diabetes) and a marked increase in the presence of communicable diseases (e.g. COVID) (Guan et al., 2020; Patton et al., 2016). One notable development has been mental ill-health (Jerrim, 2022). Several studies have shown that the prevalence of mental health, is continuing to rise (Guan et al., 2020; Smith, 2020; Teraoka et al., 2023). Approximately 10–20% of young people are affected worldwide by mental health concerns (Mansfield et al., 2020), with a median age of onset of 11 years (Lawrence et al., 2019). It has been proposed that a continuing increase in mental health concerns will cause future social and economic problems, unless new prevention and intervention approaches are explored (Lawrence et al., 2019). For example, research conducted in Singapore found the impact of mental health disorders among adults cost the economy 2.9% gross domestic product, or $16 billion per year (Chodavadia et al., 2023).

A recent study in the UK identified substantial growth in mental health disorders as young people progress through secondary school (Jerrim, 2022). Around 50% of mental health difficulties start before the age of 15 (Mansfield et al., 2020; Wood et al., 2023), with indicators of mental ill-health being recorded among 10-11 year olds (Walker et al., 2023). Mental health disorders have been associated with negative

outcomes in young people, such as lower educational attainment and physical health problems (e.g., cardiovascular disease) that can continue into adulthood (Jerrim, 2022). Indeed, 74% of global deaths annually are attributed to non-communicable diseases which includes mental health disorders (i.e. depression, anxiety, bipolar disorder; Ramirez Varela et al., 2021). In response, it has been proposed that increasing the levels of physical activity could save up to 5 million lives per year and boost mental health and wellbeing (Lynch, 2019; Ramirez Varela et al., 2021).

The association between physical activity and mental health is well established (Jewett et al., 2014; White et al., 2017). For example, in Jewett et al.'s (2014) longitudinal study, 853 participants (starting age: 12 years; average age at end of study: 20.4 years) completed three psychometric tests measuring depression, stress, and self-rating of overall mental health. The findings reported that for young people who participated in school sport they experienced significantly lower levels of depressive symptoms, lower perceived stress and high self-rated mental health during adulthood (Jewett et al., 2014). As a result, it was recommended that policies aiming at increasing engagement in school sport should be promoted to reduce the prevalence of mental ill-health among adolescents. In contrast, another large-scale study, also using psychometric measures in addition to observational methods, found there were no significant associations between school sport and mental health (White et al., 2017). It was found that participating in physical activity during leisure time had the most significant impact on promoting mental health (Fairbrother et al., 2022). Overall, there remains a degree of uncertainty about the role and impact of PE, physical activity, and school sport on mental health outcomes. Nonetheless there is consensus that finding new ways to

promote young people's engagement with physical activity has the potential to be an effective mechanism to reduce the prevalence of mental ill-health.

For young people (aged 5-17 years), recommendations to participate in at least 60 minutes of physical activity at a moderate-to-vigorous-intensity (MVPA) per day aims to prevent or combat mental health issues (Guan et al., 2020). In the UK, only 51% of children aged 5-7 years are meeting the daily physical activity target of 60 minutes MVPA (Sport England, 2023). In the most recent survey published by Sport England (2023), happiness and mental wellbeing among children aged 7-8 years old had decreased (0.34 points) to a self-rating score of 7.9 out of 10 compared to five years ago. Attributed to this change is the biopsychosocial sphere of young people's lives (Smith, 2020) including, economic instability (Kirk, 2023), increased screen time (Walker et al., 2023), and increases in non-communicable diseases (e.g. depression; Marmot and Bell, 2019). Suicide and self-harm among young people (add age range) have also risen (Smith, 2020), with reports of suicidal thoughts and behaviours occurring in 2-3% of 3-7 years in the USA (Dervic and Oquendo, 2019). To explain this further young people who experience persistent adversity (e.g. economic instability, physical health problems) respond by strengthening circuits in their brain that promote aggressive and anxious tendencies at the expense of circuits for cognition, reasoning, and memory (Immordino-Yang et al., 2019). The impact is that negative thoughts, feelings, and behaviours can become reinforced.

Wellbeing in Education

The health and wellbeing of young people in education is an important area of focus for policy-makers and educators (Jerrim, 2022). Young people (aged 5-18 years) spend the majority of their childhood in an educational setting (Demkowicz et al., 2023). In the majority of developed countries, compulsive school days average 8 hours, with many after-school clubs and activities offered as an extension to the school day (Kuritz et al., 2020). In principle, the school environment could create an ideal opportunity to embed health and wellbeing into the daily life of young people and respond to emergent issues, such as the early signs of onset of mental health disorders (Demkowicz et al., 2023; Wood et al., 2023).

There is evidence that school-based interventions benefit young people and their wellbeing. For example, Demkowicz et al. (2023) recruited 49 participants in their study (aged 6-17 years), conducting focus groups to gather data. Their analysis identified a whole school approach to enhance mental health and wellbeing for young people was necessary. They argued that any whole school initiative needs to be flexible, long term, and integrated into the school culture (i.e. embraced by teachers). Similarly, whole school environment interventions that "promote lifestyles conducive to good health are reported to have a more pronounced effect on mental wellbeing than individual approaches targeting knowledge and beliefs" (Wood et al., 2023; 2). This would appear logical given a whole school wellbeing initiative can reach many young people simultaneously and can be provided through a young person's childhood and adolescent years. This would create the 'culture' (Demkowicz et al., 2023) or 'ethos'

(Wood et al., 2023), forming physical, mental, social, and emotional habits that positively impact young people's experiences and choices in school and into adulthood.

The concept of health in education is dependent on the concept of wellbeing in education, which is explained as the complex interrelationship of physical, social and mental health (Lynch, 2019). Goodyear and Armour (2021; 2) held a similar view that 'health and wellbeing are therefore intertwined and grounded in an individual's perspective on his or her physical, psychological, and social state of being'. Drawing on positive psychology, Teraoka and colleagues (2023) conceptualised mental health in PE and referred to mental health through the concept of wellbeing and affect, across two philosophical dimensions: 1) hedonic (i.e. happiness, positive affect, low negative affect), and 2) eudaimonic (i.e. life meaning, resources, personal strengths). Hedonism in a PE context is related to the maximising of pleasure and the minimising of pain from participating in physical activity (Barrett and Bliss-Moreau, 2009; Dismore and Bailey, 2011; Norrish et al., 2013). For example, losing a sports game or achieving a fitness goal. One criticism of hedonic wellbeing is that instant pleasure and happiness may not necessarily lead to long term enjoyment (Dismore and Bailey, 2011). Eudaimonic wellbeing goes beyond hedonic experiences of pleasure and/or pain in PE as the focus is on personal growth, a sense of purpose, and self-actualisation (Norrish et al., 2013; Teraoka et al., 2023). For example, eudaimonic wellbeing may be linked to the pursuit of self-improvement and appropriate challenge in a sport context. It is based on the idea that PE can foster virtues, such as determination and self-control (Norrish et al., 2013).

Theoretically, positive psychology underpins the pedagogical approach of Positive Education (Trask-Kerr et al., 2019), which has been suggested as an appropriate framework to support and enhance wellbeing in schools (Norrish et al., 2013). In a PE and sport context, this has endorsed learner-centred, games approaches (e.g. Teaching Games for Understanding) which have been shown to improve game understanding (i.e. cognitive), technical ability (i.e. physical), in addition to motivation and positive affective experiences (Light and Harvey, 2015; Pope, 2005). In other sport pedagogy literature, Positive Education has driven a strengths-based approach by educators (Enright et al., 2014; Sargent and Casey, 2021), influenced by salutogenic health theory (Brolin et al., 2018; McCuaig and Quennerstedt, 2018; Quennerstedt, 2018), to support wellbeing.

In line with Positive Education, pedagogies of affect have been proposed to create autonomy supportive learning environments and to address the affective needs of individual students (Kirk, 2023). Kirk (2023) has positioned pedagogies of affect as an approach to PE that can address wellbeing directly and explicitly. The affective outcome of adopting affective pedagogies in PE are the development of strategies to cope with mental health disorders, such as depression and anxiety (Teraoka et al., 2023). By developing strategies or skills to cope with negative affective outcomes, students are changing from a hedonic to eudaimonic state of wellbeing; from immediate gratification to future-orientated aims and personal growth (Teraoka et al., 2023).

In PE, adopting a future-orientated perspective would impact the outcomes of health and wellbeing in addition to the learning process. For example, in the study by Korp et al. (2023), four themes were used to make sense of health among Swedish PE teachers: 1) health as a health attitude, 2) health as fitness, 3) health as functional ability, and 4) health as wellbeing. Although there were overlays between the four themes, health as fitness referred to the biomedical health perspective (i.e. pathogenic) by which health is an absence of disease (i.e. hedonic; Quennerstedt, 2019). In contrast, health as wellbeing involves a continually shifting balance between physical, mental, and social aspects of life (i.e. salutogenic; Korp et al., 2023), that can be framed by pedagogical practices such as Positive Education and pedagogies of affect to attach meaning and purpose (i.e. eudaimonic). However, advocating for affective pedagogical practices (e.g. pedagogies of affect) has created further significance in response to the COVID-19 pandemic.

Overall, a trend of mental ill-health and wellbeing has been reported among young people that requires urgent attention (Jerrim, 2022; Mansfield et al., 2020). The identification and tracking of mental ill-health and wellbeing often begins in adolescence (age 10-18), with reports of 1 in 10 primary aged children (aged 5-10 years) sharing they suffered from mental ill-health (Smith, 2020). In response, whole school approaches to enhance health and wellbeing have been advocated (Demkowicz et al., 2023; Wood et al., 2023). A reconceptualisation of health (i.e. salutogenic; McCuaig and Quennerstedt, 2018) provides a useful starting point for creating whole school initiatives. While physical activity and PE has been promoted in government policy as a significant contributor of young people's health and wellbeing

(UNESCO, 2015; OECD, 2019; WHO, 2018), further examination of the educative role of PE, in particular affective learning and pedagogies of affect, is required.

COVID-19 Pandemic

The onset of the COVID-19 pandemic in January 2020 had global implications for young people, their education, and their physical activity (Mata et al., 2023). The purpose of discussing COVID in the context of PE is to acknowledge that like mental health and wellbeing, PE experiences are shaped by external global forces such as economic instability (Kirk, 2023), increased screen time (Walker et al., 2023), and increases in non-communicable diseases (Marmot and Bell, 2019). Therefore, young people need to be prepared to face unexpected changes in their lives (Safron, 2019). Pre-COVID, three in four young people did not meet the global recommendations for daily physical activity (Ramirez Varela et al., 2021), with 71% of worldwide deaths attributed to non-communicable diseases such as cardiovascular disease and diabetes (Ntoumanis et al., 2021). The lack of physical activity during the COVID period was reported to have contributed to over 4.2 million deaths globally (Ramirez Varela et al., 2021), despite evidence supporting the benefits of physical activity in preventing or minimising the impact of respiratory illnesses through improved immune system and recovery from illness or vaccination (Chastin et al., 2021; Sallis et al., 2021).

Beyond the physical repercussions of COVID, the mental health of young people has been reported (Smith, 2020). For example, Smith (2020) described the correlation

between COVID deaths, physical health, and mental health issues occurring in lower socio-economic areas of the UK. Ferreira et al. (2023) made similar comparisons when explaining the sociological concept of precarity in localised communities. The tensions created by a rise in mental health issues were reported to 'spread discourses of anger, violence, and hate' against a myriad of social groups (e.g. gender, race, class; Ferreira et al., 2023; 4). Data demonstrating links between physical, mental, and social health struggles of young people and adults during COVID has been highlighted (Meherali et al., 2021; Sallis et al., 2021). Recommendations in response have focused on improving physical activity levels post-COVID, with the intention of improving mental health and social connections (Kirk, 2023; Meherali et al., 2021). However, gaps remain in how and what teachers say and do to educate young people on their physical and mental health in the post-COVID context (Mercier et al., 2021).

The role of PE during and post-COVID has been positioned as an important component of supporting mental health issues among young people (Kirk, 2023; Mercier et al., 2021). Teachers have expressed their responsibility for supporting their students mental health in and through PE (Teraoka and Kirk, 2022). Pedagogies of affect have been put forward as a means of supporting students feelings, needs and interests that would lead to positive affective outcomes (Teraoka and Kirk, 2022; Teraoka et al., 2023). To clarify, pedagogies of affect refer to a group of pedagogical approaches that have been identified as facilitating the affective domain in PE. However, there have been a number of changes to PE (e.g. online learning, social distancing) that were explored during COVID (Mercier et al., 2021; Varea and González-Calvo, 2020). For example, in Varea and colleagues (2020) study, investigation of pre-service PE

teachers and their experience teaching PE during COVID, they identified several issues, such as limited physical contact with students and the teacher's own notion of what PE should look and sound like. In response, students created new movement cultures, such as indoor physical activity circuits that may not have occurred in a routine PE lesson (Varea et al., 2020). The changes to PE that occurred during COVID appear to have affected students too. For example, in the study by Mata et al. (2023), a negative trend of enjoyment in PE was noted when students returned to face-to-face lessons during COVID. Therefore, the relevance of PE as a facilitator of enhancing affective learning to improve mental health among young people requires further examination.

Kirk (2023) has argued the importance of the affective domain in PE is reaching a critical point. He identified precarity as "an enduring force that will continue to feed the increasing prevalence of mental health problems among young people" (Kirk, 2023; 3). There are political, economic, and cultural factors that influence education (e.g. the gig-economy) which have created uncertainty, instability and insecurity in a post-COVID setting (Firth, 2016; Kirk, 2023). The role of PE in the context of precarity provides opportunities to engage in critical pedagogies (Ferreira et al., 2023), activity time (Wahl-Alexander and Ressler, 2020), and discourses related to mental health (Firth, 2016). Since the early industrial period, there have been various eras of precarity, including misery (c. 1860's), boredom (c. 1930's) and anxiety (c. 2000's) that can impact social and educational practices (Firth, 2016). Therefore, precarity and affect in PE appear to be mutually responsive.

Overall, PE has been positioned as a key influencer of the complex challenges facing young people and their health and wellbeing (i.e. mental health), despite PE being shaped by external, global factors such as COVID and socio-economic precarity (Kirk, 2023). To lead a healthy and physically active life, holistic educational outcomes need to be prioritised in PE. However, the physical domain has traditionally received more attention in PE literature and therefore has been more developed in PE practice in comparison to the affective domain. This leaves gaps in our understanding of how PE can support mental health and what enables and constrains affective learning in different settings. Specifically, there are three distinct areas that required further exploration and examination:

1) Defining the affective domain.
2) Measuring the affective domain.
3) Pedagogies of affect.

The following sections will delve deeper into these three distinct yet interconnected areas to identify the challenges of defining and measuring affect in addition to implementing pedagogies of affect.

The Affective Domain in Physical Education

Primary PE in the UK and internationally has been labelled as complex, challenging yet full of potential (Jess, 2011; Griggs and Petrie, 2018). Effective primary PE has

been recognised as the starting point for developing sustained physical activity (Griggs and Petrie, 2016; Jess, 2011), while international curriculums (e.g. International Baccalaureate) in primary education have been offered globally and in the UK for over a decade (Hayden, 2013). Although it has been argued that international curriculums serve to produce and reproduce power for a small minority (Kenway and Fahey, 2014), with primary PE reproducing a movement cultural of health and sport that required students to look busy and take part in sport-technique actions (Griggs and Petrie, 2018; Ward and Quennerstedt, 2015). Primary PE has historically fostered a reputation for focusing on sport competitions and providing for the physically able (Ward, 2014). In response, further research specific to primary PE is needed to bridge the gaps in literature that often focus on the physical domain and traditional notions of health and sport in PE (Griggs and Petrie, 2018).

The affective domain has been positioned as a legitimate area of learning that can positively influence young people's mental health and wellbeing (Teraoka et al., 2020). The affective domain of learning has often been conceptualised as motivation, self-esteem, self-efficacy, enjoyment, and self-regulation (Dudley et al., 2022). Although this is not absolute, as other literature across a range of disciplines (e.g. education, psychology, neuroscience) has shared varying definitions (Barrett, 2017; Casey and Fernandez-Rio, 2019; Teraoka et al., 2020). In the context of this study, affective learning was the process of change in emotional, attitudinal, and motivational learning.

The affective domain of learning has been identified as a key component of PE practice (Bailey et al., 2009). In addition to the physical, cognitive, and social domains of

learning, the affective domain supports UNESCO's vision for achieving Quality Physical Education (QPE; Dudley et al., 2022). The report issued by UNESCO, intended to guide policy makers as they set out their national PE provision, positions the affective domain as a significant element of "the planned, progressive, inclusive learning experience that forms part of the curriculum in early years, primary and secondary education" (UNESCO, 2015; 9). In addition to QPE, the inclusion of the four domains of learning in policy and practice is to help facilitate engagement in the physically active life: a core aim of PE. Despite these intentions for PE to be the solution of mental health and wellbeing concerns among young people, there have been limitations in the transfer of policy to practice. The key challenges of the affective domain as they relate to PE are:

- Lack of conceptual understanding by practitioners.
- Affect is a hoped-for, by-product in PE.
- Lack of effective tools to observe and/or measure affective learning.
- Limited understanding as to what pedagogies of affect are and how to apply them in practice.

Bailey (2006) began addressing the issue of understanding the aims and purpose of PE by labelling the possible benefits of PE that occur across several domains, including the affective domain. Bailey and colleagues (2009) further developed this through their analysis of the benefits claimed for PE across four domains of learning: physical, cognitive, social, and affective. It has been argued that mental and emotional health (i.e. affective domain) are positively influenced by physical activity (Lamb et al., 2021),

and this perspective is endorsed by international authorities, such as UNESCO (2015), OECD (2019) and WHO (2018). However, it was identified that the mechanisms of the affective domain were less well known in policy and practice (Bailey et al., 2009), and that the affective domain was difficult to define due to its subjective and imprecise nature (Pope, 2005). This ambiguity continues to exist, with calls for further research and literature to broaden our understanding of the affective domain in a PE context and how it relates to the physical, cognitive, and social domains of learning (Teraoka et al., 2020). To do this, in the following section I will begin mapping the four domains of learning to critique their status in and influence on current PE practice.

Four Domains of Learning

If the physical, cognitive, social, and affective domains of learning are to make significant and distinctive contributions to PE (Dudley et al., 2022), it has been argued that QPE should educate children across these domains (Bailey, 2006; Casey and Goodyear, 2015; Dudley et al., 2016, 2022). It has been claimed that all four learning domains are positioned as the learning aims of PE and are therefore capable of promoting a physically active life (Casey and Fernandez-Rio, 2019; Casey and Goodyear, 2015; Fernandez-Rio et al., 2017). However, there has been an imbalance between the focus each learning domain has received in PE literature and in practice, with a focus residing on one learning domain, rather than the interconnectedness between them (Zach and Rosenblum, 2021). For example, PE has been criticised for

being a recreational activity that focuses on “doing’” and “getting sweaty” (i.e. physical) rather than developing knowledge (i.e. cognitive; Redelius et al., 2015; 641).

Physical Domain of Learning

The physical, or psychomotor (Bloom, 1956), domain of learning, is a sensorimotor domain which includes a wide range of features including motor skills and motor competency (Dudley et al., 2022; Ward, 2014), balance and spatial awareness (Dettmer, 2005), and technical skills in a sport context (Evangelio et al., 2018). The physical domain has traditionally been the dominant domain of learning in PE, with a particular focus on motor performance and ability (Goodyear et al., 2014; Evans, 2013). Dubbed the “doing” domain in PE (Dudley and Burden, 2020; 87); PE has often been regarded as a practical subject, immersed in the doing of sport and physical activity rather than the knowing (Redelius et al., 2015).

Casey and Kirk (2021) pointed out that the dominance of the physical domain has led to a multi-activity, physical education-as-sport PE curriculum that teaches decontextualised sport techniques and skills. In this context, a lesson involves a teacher organising students to take part in an activity or sport by explaining the rules and format (e.g. matches) with little other interventions, making it difficult to determine the learning aims and educative value of the lesson (Larsson and Karlefors, 2015). In the study by Larsson and Karlefors (2015), the observed behaviours of students reflected what could be described as a typical PE lesson. There was a relaxed attitude

that created a recreational atmosphere whereby students were active and moving but without breadth or intent in their learning aims.

In Redelius and colleagues (2015; 641) study, the response of one student during an interview was that “we don’t learn things in PE, we do things”. This has in part been attributed to the traditional, teacher-centred practices of directed pedagogy in PE (Evans et al., 1996; Stolz and Pill, 2014), but practice has been shaped and influenced to a certain extent by the political climate and policy makers (Macdonald, 2015). For example, Haerens and colleagues (2011) commented how a de-emphasis on competitive sport and fitness activities in the National Curriculum for England and Wales could lead to young people valuing a physically active life inclusive of health and wellbeing. Kirk’s (2010) analysis of similar curricula, which appear to focus on energy expenditure and physical fitness indices, are implied to be ineffectual and generate narrow objectives. These could have a negative impact on student engagement, enjoyment and motivation in PE (Goodyear et al., 2014).

The prominent focus on the physical domain in PE has encouraged an increase in MVPA to address concerns with health (Quennerstedt, 2018). MVPA has been argued to address issues of non-communicable diseases (i.e. cardiovascular disease) and infectious diseases (Chastin et al., 2021), which has led to calls for MVPA to be considered as an important feature of young people being physically active in and out of school (Sport England, 2023). Similarly, it has been suggested that MVPA needs to take up at least 50% of a PE lesson (Dudley et al., 2016). However, while MVPA is important for health promotion among young people, it may not help support the mental

and emotional health issues that they are going through (Kirk, 2023), which contrasts with the stance adopted by many governmental policies that physical and mental health are inextricably tied together (OECD, 2019; UNESCO, 2015; WHO, 2018).

Cognitive Domain of Learning

UNESCO (2015) position the cognitive domain of learning as an important step in promoting lifelong physical activity among students. It has not always been an obvious part of planning, delivery and assessment, unlike the physical domain, but is now an essential component of QPE (Haerens et al., 2011). Drawing on Bloom's (1956) cognitive taxonomy, the cognitive domain's hierarchy begins with the acquisition of knowledge, followed by more sophisticated cognitive tasks of comprehension, application, analysis, synthesis, and evaluation (Pierre and Oughton, 2007). Metzler (2011), who advocated for Models based Practice (MbP), placed learning in the cognitive domain as understanding logic, developing concepts, and recalling knowledge from memory. It has been argued that pedagogy emphasising a facilitative, student-led approach to teaching PE encourages sophisticated cognitive tasks of comprehension and analysis (Barker et al., 2015a; Atencio et al., 2014).

There are several observation tools (e.g. SOLO) that can support teacher observation and assessment of cognitive outcomes and behaviours (Chan et al., 2002). Atencio and colleagues (2014) highlighted the benefits of using a non-linear pedagogical approach to design complex and challenging tasks that focus on problem-solving and

decision making (i.e. cognitive) in PE lessons. The findings indicated that students – individually and collectively – were forced to self-organise and to take responsibility for their learning. Tan et al., (2012) reported that a tactical games approach resulted in better performance outcome measures for some aspects of skill execution and cognitive processes. However, it has been suggested that the adoption of tactical games approaches emphasises the cognitive domain at the expense of the physical, therefore compromising the perception of optimising QPE (O'Leary, 2014).

The cognitive domain and affective domain are two interrelated areas in PE that have been shown to influence each other. Cognitive understanding can positively impact the affective domain in several ways, such as the development of tactical awareness in small sided games which in turn can influence an individual's motivation and enjoyment of physical activities (Pan et al., 2023). However, broader educational objectives tend to align with cognitive (and physical) development in PE over affective outcomes (Casey and Goodyear, 2015). Cognitive outcomes are often more straightforward in their measurement and objectivity when tested or assessed by teachers (Darnis and Lafont, 2015).

Hattie's (2009) meta-analysis of educational research focuses on the premise that teaching and learning is visible, specifically that teaching should be visible to the student and that learning should be visible to the teacher through a variety of methods (e.g. teaching approaches and feedback). In this conceptualisation, Hattie (2009) positioned teachers as activators of learning. In his original text, Hattie focused on the cognitive domain of learning, using Bloom's (1956) taxonomy as a key point of

reference. Hattie's acknowledgement that the affective domain was not discussed led to a sequel meta-analysis which considered affective outcomes (e.g. attitudes; Hattie, 2023). In both books, the structure of observed learning outcomes (SOLO) tool was proposed to identify teaching and learning strategies (i.e. make learning visible). Dudley and colleagues took this observation tool and expanded it conceptually to focus on health and PE (Dudley et al., 2016). A rubric of four learning domains (i.e. affective, cognitive, social, and physical) and their progressions (i.e. pre-structural, uni-structural, multi-structural, relational, and extended abstract) were proposed as a means of making learning visible to teachers. Although conceptually valuable, there is no empirical evidence to support its use in a classroom setting.

Social Domain of Learning

Social skills have been proposed as integral to achieving QPE objectives set by UNESCO (UNESCO, 2015). Dudley et al. (2022) defined social learning outcomes as prosocial behaviour, teamwork, cooperation, social competence, and self-control. Behaviourist notions of learning have existed in PE for long and sustained periods (Light, 2008), with a focus more exclusively on the physical and cognitive domains. However, in times of social and cultural change (e.g. COVID; Ramirez Varela et al., 2021), learning can be viewed as a collaborative endeavour that requires complex interactions, networking and information sharing (Jess et al., 2011).

The social domain is closely linked to the affective domain, historically being associated as one domain (i.e. socio-affective) rather than two separate areas of learning (Casey and Goodyear, 2015). The overlap, such as observing gestures of fair play (e.g. shaking hands) in PE, has contributed to the character building narrative of sport (Bailey et al., 2009). The social domain predominantly focuses on the interpersonal relationships, teamwork, cooperation, and communication between students (Dudley et al., 2016), while the dynamics of a relationship may influence how a student feels towards a particular group or physical activity (Dismore and Bailey, 2011). The motivation of students to participate and engage in physical activity has been highlighted as a key indicator of social outcomes (Evangelio et al., 2018; Luna et al., 2020). It was noted in Hastie and colleagues review on Sport Education (2011) that issues surfaced regarding the devolution of power among students and that students with higher status in the PE context often dominated activities and games. The perception that a student possesses more knowledge than a peer impacts on the motivation of others to engage in the learning process. Similar findings related to the physical prowess of students in PE have been found in other PE contexts (Smee et al., 2021). However, the impact of cultural and social norms on affective learning in PE appears to be less known.

The pedagogical model Cooperative Learning has been evidenced as one way to promote social outcomes (Dyson et al., 2004; Goodyear et al., 2014; Johnson and Johnson, 1999; Slavin, 2015), and affective outcomes (Casey and Fernandez-Rio, 2019) in PE. Through a focus on positive interdependence (i.e. mutual support and encouragement) and the development of small group skills, Cooperative Learning can

support learning in social and affective domains (Casey et al., 2015). Games centred approaches are evidenced to promote purposeful social interactions and deep personal learning experiences through reflection and dialogue (Light and Harvey, 2015). However, in Harvey and Jarrett's (2014) review of game centred approaches, between 2006 and 2014, there were limited studies that focused on both social and affective development, such as connections between cooperation and fair play.

Affective Domain of Learning

Conceptualising the Affective Domain in PE

In 1987, Don Hellison outlined two key issues with the affective domain in PE: 1) it is a conceptual nightmare to define and measure, and 2) instructional approaches are often unable to address affective outcomes. Little appears to have changed since Hellison's critique (Casey and Fernandez-Rio, 2019), although there is a now a larger focus on the affective domain in PE literature (Teraoka et al., 2020), which primarily aims to address concerns with young people's mental health and wellbeing (Teraoka et al., 2023). Teraoka and colleagues (2020) systematic review of the affective domain in PE grouped 26 empirical studies (20 quantitative, 2 mixed-methods, 2 qualitative). Studies were included in the review if affective learning was the primary focus of each study and if the study designs demonstrated fidelity. The results of the review were split into four distinct themes: motivation, emotional responses, self-concept, and resilience. Autonomous *motivation* was a prominent outcome for the affective domain

in the studies selected. *Emotional responses* such as enjoyment, interest and satisfaction were noticeable affective outcomes due to the novelty of the interventions. Interventions that were task-orientated and personalised supported the affective outcome of *self-concept*. PE was identified as a subject that could contribute to *resilience*, or the development of knowledge and skills (e.g. relaxation techniques) to cope with stress. The four themes were proposed as a means of defining the affective domain for future empirical research.

There appears to be a consensus that aligns with Zach and Rosenblum (2021; 1) assertion that the affective domain is "part of the human inner world, as well as outer world relationships and communication with others, with implications for the individual's well-being and quality of social relationships." Avner et al., (2023) went further, proposing that social life is imbued with affect. Reporting on the affective domain in sport, Avner et al. (2023) explained how interactions with others can influence an individual's emotional state, with affect then playing an important role in the way individuals form judgements and behave in certain social situations. The lack of consensus defining the affective domain has, in part, occurred due to the lack of focus in literature. As previously mentioned, a larger focus has been placed on the physical and cognitive domains instead (Casey and Fernandez-Rio, 2019).

Taking this analysis further, affect in PE can be considered the enhancement of student feelings, attitudes, and emotions that reflect the characteristics or personal qualities of individuals (Casey and Fernandez-Rio, 2019). The affective domain could be extended to include motivation, self-esteem, self-efficacy, enjoyment, and self-regulation (Dudley

et al., 2022). Kirk (2023) expanded on these affective components by adding determination, resilience, responsibility, leadership, respect, tolerance, and communication. Therefore, it can be assumed that affect as a construct is diverse and varied and should be reflected in that way in PE literature, a point made by Pope (2005), nearly two decades ago.

The taxonomy of educational objectives is a framework that has been used across education to classify what students may learn as a consequence of instruction (Krathwohl, 2002). The affective domain originated as one of Bloom's (1956) three taxonomies: 1) affective, 2) psychomotor, and 3) cognitive. All three taxonomies have levels that build from low- to high-order learning. The affective taxonomy, co-created with David Krathwohl, involves five levels of internalisation: receiving (e.g. openness to and awareness of new ideas and experiences), responding (e.g. students engage with physical activities), valuing (e.g. internalising and prioritising physical activity to contribute to overall health), organising (e.g. students organise their attitudes, beliefs and values in relation to physical activity), and characterising (e.g. consistent behaviour reflects deep-set values; Krathwohl, 2002). However, others have closely linked affective learning to social practices specifically regarding values and culture (Gil-Madrona et al., 2016; González-Víllora et al., 2018), suggesting the affective domain is not limited to internal processes. The social and affective domains have been distinguished with the former involving interaction and collaboration while the latter can be diverse and varied (Bailey et al., 2009; Pope, 2005).

While learning domains may intertwine, this has created ambiguity in the literature, impacting how and what teachers do in practice. For example, in García-López and Gutiérrez's (2015) study 154 students completed two psychometric measurements to evaluate the impact of the Sport Education model on empathy (affective) and assertiveness (social). The findings showed that Sport Education can be used to enhance assertiveness in PE, although there was no indication empathy was enhanced too (García-López and Gutiérrez, 2015). The reason for associating affective learning with social learning has perhaps emerged due to the ambiguous definitions of the affective domain. Affective learning has been referred to as psychological and internal processes that are difficult to observe, assess and evaluate (Casey and Fernandez-Rio, 2019). García-López and Gutiérrez's (2015) study highlighted the pedagogical and conceptual challenges teachers and policy makers face when attempting to distinguish between the social domain and the affective domain. In addition, the study underlined some limitations in the PE literature, such as how a teacher may observe or analyse the affective domain in lessons.

Varying theoretical stances appear to have reflected how components or indicators of the affective domain are conceptualised. For example, the use of self-determination theory (SDT) appears to have gained traction in recent literature (Bureau et al., 2022; Gil-Arias et al., 2020; Howard et al., 2021; Mitchell et al., 2015; Sierra-Díaz et al., 2019; Wisniewski et al., 2018; Wu et al., 2021). In a recent meta-analysis of SDT that informed studies in the health domain, SDT interventions were found to have a positive effect on psychological (i.e. affective) health (Ntoumanis et al., 2021). In addition, SDT has been used to inform pedagogies of affect (Kirk, 2023), which promotes autonomy

supportive teaching to influence positive affective outcomes (Teraoka and Kirk, 2022). Autonomy was a significant indicator of mental health in White et al. (2017) meta-analysis. For example, the option and choice of a young person cycling to school was likely to produce an enjoyable experience, in comparison to being forced to cycle to school (White et al., 2017).

The creation of a sense of agency and autonomy for students has been acknowledged for providing opportunities for young people to implement self-determination through meaningful participation (Patton et al., 2016). Providing young people with choices and opportunities for autonomy in selecting activities can enhance motivation and engagement in PE (Bailey et al., 2009). SDT has been used to establish links between the satisfaction of psychological needs (i.e. autonomy, competence and relatedness) and wellbeing, which improves when an individual's psychological needs are satisfied (White et al., 2017). SDT has been used to contribute theoretically and empirically to PE, health, wellbeing and, creating a sense of autonomy (Teraoka and Kirk, 2022; Teraoka et al., 2023).

Despite the popularity of SDT as a means of understanding the affective domain and pedagogies of affect (Lamb et al., 2021), there are several drawbacks that have limited the conceptualisation of the affective domain using SDT. For example, there have been challenges in how affective learning can be measured (Casey and Fernandez-Rio, 2019), due to a lack of instruments or tools that are appropriate for capturing every facet or feature of the affective domain. Similarly SDT has been critiqued for the difficulty in measuring autonomy, competence, and relatedness due to the subjectivity,

complexity and context-dependency involved in the process (Sierra-Díaz et al., 2019). The role of autonomy in the relationship between physical activity and mental health has also not yet been explored thoroughly (White et al., 2017).

Other theoretical perspectives have been applied to understand the affective domain in a PE context. Achievement goal theory has been used to study motivation in educational contexts (Fernandez-Rio et al., 2019). According to this theory, different environmental elements (i.e. teachers, parents, and peers) help create a class motivational climate which drives students to build their competence (Jaakkola et al., 2019). In Jaakkola and colleagues (2019) study, they identified a task-orientated climate was conducive to enjoyment in PE in comparison to ego-orientated. However, while there has been a focus on the conceptualisation of the affective domain and motivation there are alternative theoretical perspectives that could be drawn on. For example, self-efficacy theory (Bandura, 2001), symbolic interactionist theory (Barker et al., 2019; Blumer, 1969), and attitude theory (Mercier and Silverman, 2014) could support the exploration of other components of affect (e.g. feelings, beliefs, values).

Overall, the affective domain has been shown to carry multiple meanings in a PE context (Dudley et al., 2022; Teraoka et al., 2020). While attempting to offer learning experiences that access all domains, affective learning has received less attention in PE literature (Wahl-Alexander and Ressler, 2020). A lack of research that examines and supports PE practice in all four domains of learning appeared to be one reason for a shortage of research on the affective domain (Zach and Rosenblum, 2021). More recent literature has considered how research interventions to optimise QPE could be

achieved through the physical, cognitive, social, and affective domains of learning (Dudley et al., 2022). For example, the hybridisation of pedagogical models (i.e. TGfU and Sport Education) was found to be beneficial when encouraging holistic learning (González-Víllora et al., 2018).

Pedagogical models have been proposed as a realistic option to broaden PE's educative status (Casey and Kirk, 2021b; Kirk, 2013). More recently, Kirk and others have considered how 'pedagogies of affect' may support the integration of the affective domain in PE practice, simultaneously beginning to address issues of precarity, mental health, and wellbeing (Ferreira et al., 2023; Kirk, 2023; Lamb et al., 2021; Teraoka et al., 2023). The following section identifies existing pedagogies of affect and gaps that may exist within current PE literature.

Pedagogies of Affect

Pedagogies of affect seek to support young people who may be most at risk from mental health and wellbeing issues (Kirk, 2023). For example, Teaching Personal and Social Responsibility (TPSR) was proposed as a pedagogical model that could explicitly teach components of the affective domain (i.e. respect; Hellison, 1987). TPSR encourages students to reflect on their strengths and their weakness, taking responsibility for themselves and others (Bjørke and Quennerstedt, 2023; Martinek and Hellison, 2016). Yet, the type and quantity of pedagogies that lead to affective outcomes and aspirations remains minimal. A lack of theoretical diversity has led to a

narrow conceptualisation of the affective domain (e.g. motivation; Pope, 2005), impacting the type of pedagogies available to teachers for observing and measuring the affective domain in context.

Pedagogies of affect are a collection of pedagogical approaches that seek to address issues such as mental health, wellbeing and precarity (Ferreira et al., 2023; Kirk, 2023; Teraoka et al., 2023). An activist approach – an instructional approach that emphasises critical reflection, social justice, and advocacy – has been identified as a pedagogy of affect, reported to be inclusive and enjoyable in secondary schools in Ireland (Enright and O'Sullivan, 2012b) and Scotland (Lamb et al., 2021). It was suggested that positive affective learning occurred as a result of the students feeling comfortable in their environment, and that same-sex groups contributed to a needs-supportive approach (Lamb et al., 2021). Same-sex grouping is a contested practice in PE that was acknowledged by Lamb and colleagues (2021). However, the justification of creating a psychologically and emotionally safe environment that was familiar and reduced fear or judgement is to be endorsed if affective outcomes are to be realised in PE (Patton et al., 2016).

To expand our understanding of pedagogies of affect, it is possible to turn to recent systematic reviews that include the affective domain. For example, Dudley and colleagues (2022) conducted meta-analysis of learning and development interventions and instructional design that drives QPE across four domains of learning. The review included a total of 135 studies, of which 56 focused on affect, and a further 13 combined affect with other domains of learning (i.e. physical, cognitive, and/or social).

Importantly, only 54% (n=37) of the papers met five or more of the methodological quality assessment criteria outlined by the authors. The review was important for several reasons. Firstly, it highlighted how physical activity (i.e. physical domain) alone will not drive the learning and development of students. Secondly, the affective domain could be influenced and influential in students' holistic learning in PE. The review was particularly useful to gauge which instructional designs have been reported to promote affective learning, and thus contribute to achieving QPE. Although several instructional designs were identified that supported affective learning (i.e. yoga, exergaming, health-based PE), the Sport Education model was considered the most effective in achieving affective and physical outcomes.

Quantitative research designs have been found to be the preferred choice to investigate and report on the affective domain in PE (Dudley and Burden, 2020; Teraoka et al., 2020). Dudley's (2022) review highlighted that PE could function to enhance learning and development holistically, and that the affective domain was a crucial part of this. Although like Teraoka's review, most of the studies reporting on affect were quantitative. Dudley and colleagues (2022) argued that deliberate and intentional interventions were necessary for affective learning to occur. Despite this, the review offered little insight into the broader affective learning aims and objectives that could be achieved. Further limitations included the unreported duration of PE lessons (e.g. how long was required to observe positive interventions), the number of PE lessons (e.g. if there were significant differences between a six- or nine-week unit), and understanding the specific age or learning needs of students (e.g. a 6 year old's perspective compared to a 16 year old). In addition, it was not discussed whether the

instructional designs in the review were sustained and therefore impactful on affective learning beyond the length of each study. Despite these limitations, the study was useful to understand that physical activity alone is not sufficient to enhance QPE and that deliberate pedagogical interventions are required if affective outcomes are to be realised in PE.

Teraoka and colleagues (2020) systematic review of the affective domain in PE, highlighted that current evidence on affective learning in PE since 2010 is largely based on self-report measures. They identified that the use of MbP and the TARGET framework were successful in achieving affective outcomes, which supports the findings reported by others (e.g. Dudley et al., 2022). In addition, “offering choice, encouraging peer feedback, asking deductive questions, focusing on personal improvement, and differentiation” were considered effective teaching strategies to encourage affective learning (Teraoka et al., 2020; 24). In their recognition of the self-reporting design limitation to the affective domain in PE, Teraoka and colleagues (2020) recommended that future investigations should involve observational tools and strategies to further examine the affective domain.

Measuring the Affective Domain

Measuring and assessing the affective domain has been problematic due to the lack of consensus defining affect in a PE context (Casey and Goodyear, 2015; Dyson et al., 2010; Gil-Madrona et al., 2016; Haerens et al., 2011). In part, this could be a

consequence of learning outcomes and assessment needing to be more authentic for teachers and students (Dyson, 2014; Goodyear et al., 2014; Kühn, 2017; Marsden and Weston, 2007; Thorburn and Horrell, 2014; UNESCO, 2015). In Hastie and colleagues (2011) Sport Education literature review, they identified components of the affective domain in 21 different studies. However, these were often the by-products of the purpose of the study, and measured factors such as enjoyment, motivation, and attitude through large scale, quantitative methods (Hastie et al., 2011)

Kirk has expressed similar concerns that the affective domain is implicitly hoped-for rather than deliberately intentional in PE (Kirk, 2023). Others have also pointed out the reliance on measuring the affective domain using quantitative psychometric testing is not necessarily the most effective method for measuring emotions and attitudes (Pierre and Oughton, 2007). The affective domain has been proposed as a means of engaging students in deeper learning and understanding in PE, which could be limited by the use of questionnaires and surveys to collect data (Pierre and Oughton, 2007).

Casey and Kirk (2021) stated a move away from the delivery of physical education-as-sport approach toward MbP could assist in promoting lifelong physical activity among students. They argued that learning aspirations rather than learning outcomes were more appropriate as it was not yet possible to know the affect a teacher may have on learning in the affective domain (Casey and Kirk, 2021b). For example, it was found in Lund and Veal's (2008) study that student teachers had the greatest difficultly writing affective outcomes, with 78.4% of the affective objectives being neither measurable nor feasible. In total, 17 student teachers were provided with data using semi-

structured interviews. Of the 84 assessments documented by the teachers, 60% of learning outcomes focused on the physical domain, 27% on cognitive outcomes, and 13% on affective, with no consistent or viable method used by the student teachers to assess affective outcomes. As part of its guidelines for policy makers, UNESCO (2015) explained the importance of providing a teacher training programme that supports the development of teaching practice across all four domains of learning. Casey and Kirk's (2021) suggestion to redefine outcomes as aspirations may support this. However, it appears that more research is required to assist PE teacher education programmes and teacher educators understanding of the affective domain.

Glennon and colleagues (2015) argue that while affective measurements in PE already include attendance, participation, effort and behaviour (i.e. objective components) these stop short of accounting for personal values, beliefs, attitudes, and emotions (i.e. subjective components). Acknowledging there is little to no formal assessment of the affective domain in PE due to measurement difficulties, Glennon et al. (2015) provided a range of hyperthetical assessment options available to teachers: rating scales, journaling, checklists and rubics (Glennon et al., 2015). Kühn (2017) attempted to allow students to redesign their personal learning environment through a student-centred and authentic learning experience. Student-centred learning and authentic learning have been reported to increase motivation and positive affective experiences (Light and Harvey, 2015), and could also have a positive effect on mental health (Jewett et al., 2014). However, Kühn's students were relucant to engage in unfamiliar activities, generating anxiety and uncertainty, particularly during periods of assessment. Therefore, support mechanisms and more flexible assessment criteria were proposed

to generate an explorative mind-set to encourage students to take risks, engage in learning, and build self-confidence (Kühn, 2017). Each study (i.e. Glennon et al., 2015; Kühn, 2017) acknowledged how problematic assessing the affective domain is due to the difficulty in its conceptualisation. Promoting further questions about how PE can challenge the rise in mental health and wellbeing issues among young people. Alternative and fresh theoretical perspectives could expand on the current conceptualisation of the affective domain.

Barriers and Facilitators of the Affective Domain in Physical Education

The following section explores and examines the potential barriers and facilitators of supporting the affective domain in PE. The purpose is to identify social and contextual challenges that inhibit implementing innovative approaches to enhance affective learning in PE, making PE resistant to deliberate and sustained change.

Barriers

Only a few studies show how innovation with change is possible (e.g. Goodyear et al., 2016; Goodyear, 2017). Therefore, there are significant barriers that prevent sustained change in PE, inhibiting the inclusion of the affective domain to achieve QPE and a physically active lifestyle (UNESCO, 2015). For example, political, economic, and cultural factors can negatively impact on policy and everyday practices in education

(Angus, 2015). UNESCO's guide to achieving QPE acknowledges the interest of PE to policymakers, which aims to facilitate a broader PE curriculum through the inclusion of the affective domain. However, a recent case study analysing UNESCO's 2015 guide reported that QPE had been politicised with agendas (e.g. neo-colonial) impacting educational practices (Uhlenbrock and Meier, 2021).

It has been argued that PE has not changed since the 1960's (Beni et al., 2023). Since the introduction of mass education in the UK during the 19th century, the school, as an institution continues to operate as an industrialised society with standardisation, centralisation, specialisation, and bureaucratisation (Kirk, 2010). The tensions that inevitably arise between the idealistic and realistic aims of PE can be viewed when a 19th century institution tries to keep pace with the rapid social and cultural developments of the present day (Gard et al., 2013). Social and cultural developments that have recently impacted schools such as globalisation (Kenway and Fahey, 2014; Macdonald, 2014, 2015), technology and digital literacies (Kalantzis and Cope, 2023; Lim, 2022), and health in relation to the COVID-19 pandemic (Guan et al., 2020; Jakobsson et al., 2020; Ramirez Varela et al., 2021) have in turn affected teaching and learning of PE.

Kirk (2010) highlighted the evolution of PE's aims through the types of activities and pedagogies delivered. The early aims of PE in the UK were primarily positioned around Swedish gymnastics and the militaristic outcomes it sought to achieve (Bailey et al., 2009). Educational gymnastics and dance were also introduced as a means for policy makers to control young people's bodies through regulated behaviour, economic

productivity, and social order (Kirk, 2001). However, a shift occurred during the middle of the 20th century from gymnastics to sport and games in the PE curriculum (Lynch, 2019). The transition from physical education-as-gymnastics to physical education-as-sport was the consequence of military veterans returning from World War Two to take up PE roles in schools, policy makers intending to improve physical fitness, and the subsequent increase in competitive, amateur sport (Kirk, 2010).

Fast forward over half a century and the objectives of PE at Key Stage 1 (i.e. aged 5-7 years) in the English National Curriculum (ENC) encourages all students to succeed and excel in competitive sport and physical activity as means to build character (i.e. fairness and respect) and enhance individual health and fitness (DfE, 2013). Sport and competition have been consistent components of the ENC for over 50 years. Although lacking detail, the ENC appears to promote preconceived notions of PE, whereby physical learning outcomes (e.g. sport) will develop other areas of learning (i.e. affective) as a by-product (e.g. fairness). The lack of detail provides little clarity to teachers about how to develop character traits such as fairness and respect. This causes pedagogies that intend to develop physical ability, skills, and performance (Kirk, 2010). Although it has been suggested that the lack of appropriate teacher education, existing teacher knowledge, and traditional PE pedagogies mean that student movement also does not improve (Barker et al., 2017).

Politically in the UK, the English National Curriculum's directive to teachers is for PE to encourage competition and physical activity (DfE, 2013; Herold, 2020). However, Herold (2020) found that with little guidance for teaching and assessment, there were

opportunities broaden the learning experience, potentially including the affective domain. Discourses on policy were reported to be guided by politics rather than providing opportunities for young people to learn how mental health can be positively affected by participating in regular physical activity (Jung et al., 2015). In New Zealand, the national curriculum is inclusive of different cultures (e.g. Māori and Pasifika) and health (MOE NZ, 2007). However, PE teachers were found to be constrained by the complex and incompatible expectations of additional government policies seeking to focus on health, sport, and to improve national achievement outcomes (Petrie and lisahunter, 2011). This narrowed the focus in PE to predominantly physical capability and development. Consequently, sport and the physical domain have become embedded in educational cultural practices at macro (i.e. government policy), meso (i.e. curriculum documents) and micro (i.e. discursive histories and pedagogical practices of PE teachers) levels (Tinning, 2012).

Beyond the physical aims of PE (e.g. improving fitness, sport-skill development), PE's position in the school curriculum originated from longstanding claims about character development (i.e. affective outcomes) in a sport and games curriculum (Kirk, 2013). This began in middle and upper class UK private schools and were transferred into secondary state schools by policymakers (Bailey et al., 2009; Kirk, 2010). There have been further claims referring to the aims of PE as a one-size-fits-all, sport-as-technique, multi-activity form, that needs to be replaced if the future of PE is to have educative value and relevance for young people (SueSee et al., 2022). However, as Beni and colleagues (2023) alluded to, the aims of PE do not appear to have changed therefore the focus and understanding of the affective domain remains elusive. For example, in

Quennerstedt's (2013) analysis of 285 video-recorded PE lessons from 27 different countries, there continued to be focus on sport-skill development, sport performance, and a multi-activity approach. Despite Quennerstedt's analysis being a decade old, research continues to refer to the uncertainty of PE's purpose and pedagogy with a focus on sports performance and sport-skill development (e.g. Powers et al., 2022).

Economic and physical constraints, such as a lack of time for PE in the wider school curriculum, would appear to be a barrier to the affective domain, particularly if teachers delivery of affective outcomes are to be sustained (Dudley and Burden, 2020). Furthermore, a deregulation of the school system has created an economic environment that encourages privatisation, marketisation and commercialisation has exasperated this (Evans, 2014; Macdonald, 2015). Free market conditions that provide choice for parents is based on the assumption that overall standards of academic performance will increase (Angus, 2015). The impact of this in practice are that budgets are constrained, with priority for purchasing equipment or upgrading physical space given to existing aims of physical education-as-sport and physical learning outcomes (Petrie et al., 2018).

Unlike physical outcomes that can be immediately initiated, outcomes related to the affective domain take longer to develop (Pope, 2005). Seemingly this has affected pre-service teachers whose lack of familiarity with the affective domain and eagerness for students to be physically active has reinforced existing practices (Gurvitch et al., 2008). Therefore, PE teachers who are given limited time to develop pedagogical knowledge in their professional development are unlikely to incorporate new pedagogies and

habitually reinforce physical learning outcomes (Sirna et al., 2008), presenting a considerable barrier to the affective domain. It has been reported that teacher education continues to reinforce existing aims and pedagogies for PE (Dyson et al., 2016), therefore further economic (i.e. funding) and physical (i.e. time) resources are required to sufficiently challenge pre-existing behaviours and form new practices that promote learning in the affective domain (Patton et al., 2016).

Social and cultural attitudes that undervalue the importance of PE may contribute to a lack of support from parents, school leaders, and policy makers (McEvoy et al., 2017). The varying aims of PE from these stakeholders have often meant that the affective domain is not prioritised. Historically, sport has been prioritised, with a recent health-based agenda growing among educators and policy makers in a bid to combat non-communicable diseases (i.e. obesity; Kirk, 2023; Korp et al., 2023; Petrie and Clarkin-Phillips, 2018; Tinning, 2012). In Singapore, the prevailing dominant utilitarian culture in PE was continually reinforced by scholars and research seeking to prove rather than improve practice, preventing teachers who aspired to integrate holistic educational goals such as affective outcomes (Tan et al., 2009; Teo and Koh, 2020).

There has been an emphasis on academic subjects over PE within society that positions PE as a minor subject and therefore not as important for young people to engage in (Jin, 2013; McEvoy et al., 2017). In China, health and wellbeing has been included in PE policy, which intended to broaden the PE curriculum beyond sport participation (Jin, 2013). However, the reality for teachers in China was that academic subjects were prioritised for entrance into secondary school and university. A schools

status – an important factor in the cultural context – and therefore the status of school leadership, parents, and teachers, was determined by the academic results of students, reducing the time and significance placed on PE despite teachers attempting to implement government policy (Jin, 2013). China is not unique in this situation (e.g. Singapore; Tan et al., 2009; Teo and Koh, 2020), but it will continue to be challenging for teachers to integrate the affective domain in PE if policy makers, school leaders, parents and other stakeholders devalue the subject in a wider social and cultural context.

Facilitators

Sustainable change and innovation within PE has been problematic (Goodyear et al., 2016; Goodyear, 2017). In the absence of contextual barriers, it is plausible that they would be facilitators of affective learning in PE. For example, providing safe and sufficient physical space and resources could facilitate teachers and students towards achieving the aims of QPE, enhancing mental health and wellbeing (Patton et al., 2016). Innovation with change in PE has occurred in several different settings (e.g. Enright and O'Sullivan, 2012a, 2012b; Enright et al., 2014; Luguetti et al., 2022; Luguetti and Oliver, 2020; Oliver and Kirk, 2016; Oliver and Oesterreich, 2013), and often involve one PE department, a teacher-researcher role, and incorporate student voice.

Methodologically, many of the studies where innovation with change occurred adopted an Action Research approach, or similar (e.g. Participatory Action Research).

Facilitators and/or mechanisms of change have been established but overall literature in PE remains thin making it was necessary to explore on other areas. For example, in nursing, it was reported the strength of a relationship, the literal and metaphorical space for teaching and learning, and the authenticity of sharing learning stories or illustrations can facilitate learning in the affective domain (Kangas-Niemi et al., 2018).

In Goodyear and colleagues (2016) study, teachers voluntarily opted to implement the Cooperative Learning model, which resulted in sustained change in their practice. It was acknowledged that many proposed curricular changes in education are policy-driven rather than teacher initiated (Goodyear et al., 2016). Similarly, sustained, individualised support (internal and external) impacted teachers' practices of Cooperative Learning (Goodyear, 2017). Through these mechanisms, teachers gained confidence in their pedagogical fluency and responding to students' learning needs. Therefore, appropriate professional development is key for PE teachers to learn and develop their practices to meet the complex and contemporary needs of young people and changes in society (Armour et al., 2017; Goodyear, 2017), including the integration of affective learning in PE to challenge mental health concerns (Kirk, 2023).

Overall, there remains an evidence-based gap in what facilitates affective learning. Several political, economic, and cultural barriers and facilitators of PE have been identified, providing optimism that sustained innovation and change in PE can realised. Recognising and addressing barriers while promoting facilitators is essential if teachers are to be supported in developing their practices to meet the diverse and complex needs of their students' overall health and wellbeing (Cefai et al., 2022; Demkowicz et

al., 2023). It is reasonable to consider that by removing or reducing a barrier in PE, this will become a facilitator, and vice versa. However, this is overly simplistic. For example, in China the reality of including health and wellbeing in PE policy was not realised due to the priority placed on academic achievement and school status and a lack of teacher-initiated practices (Jin, 2013).

Theoretical Perspectives

In this chapter, existing theories that have contributed to our understanding of the affective domain have been discussed (i.e. Self-Determination Theory and Bloom's Affective Taxonomy). However, rather than the application of a grand theory towards inquiry, I addressed the specific phases of the study by heeding Dewey's call for "specific inquiries into a multitude of specific structures and interactions" (Meiklejohn, 1966; 189). That is, rather than an all-encompassing approach, there was a need to offer more *ad hocey* in the research process (Thomas, 2007). Such a strategy addresses Wolcott's (2001, p. 76) warning of:

> "the temptation to offer satisfying, simple, single-cause explanations that appear to solve too facilely. Human behaviour is complexly motivated. Our interpretations should mirror that complexity rather than suggest that we are able to infer 'real' meanings."

To address data generated in this study and capture the complexities of affective interactions, several theoretical perspectives were therefore utilised to provide a richer and more nuanced understanding. This is in preference to locating data through a self-determination lens, which has been criticised in PE for implying teachers can support all students' motivational needs, the inconsistency on the impact of teachers and peers supporting basic psychological need satisfaction, and that not all students are intrinsically motivated in PE (Vasconcellos et al., 2020). It has been suggested that Bloom and Krathwohl's Affective Taxonomy can be used to guide teachers as they identify affective learning options (Casey and Fernandez-Rio, 2019). However, the hierarchical structure and rigid classification of categories may not capture the complex and multifaceted aspects of learning. Therefore, I drew from three theoretical frameworks in health, education, and sociology to provide a fuller account of interactions in the affective domain, and these are described in the following sections.

Salutogenisis

Health has been considered as a broader approach to teaching and learning in PE through its connection with physical activity and movement (McCuaig and Quennerstedt, 2018). Health has recently been conceptualised through Antonovsky's model (Quennerstedt, 2018), which has been used in research to provide an alternative notion of health – salutogenic – to the more widely adopted – pathogenic – perspective (e.g. Brolin et al., 2018; Maivorsdotter and Andersson, 2020; Thorburn and Horrell, 2014). The pathogenic viewpoint assumes health as biomedical and something

that can be fixed (Brolin et al., 2018). Tinning's (2012) prediction that the next shift from physical education-as-sport towards combating obesity, in addition to eating habits and physical in-activity (McCuaig and Quennerstedt, 2018), is aligned with policy makers pathogenic perspective and is in tension with the growing body of literature on the intended aims of PE to be broad and educative.

To achieve the broad and educative ideals of PE, the positive approach of salutogenisis (Light and Harvey, 2015) offers a socio-critical alternative where health exists across a continuum that is never fully realised (Korp et al., 2023). Health is not something that you have or do not have (i.e. pathogenic), health exists to different degrees – it is personal and contextual – and involves a sustained, ongoing process (Brolin et al., 2018). A salutogenic notion of health emphasizes what creates health rather than what are the limitations and causes of disease (Maivorsdotter and Andersson, 2020). Conceptually, salutogenisis is more concerned with the affective and social dimensions of health rather than physical and cognitive (Light and Harvey, 2015). A salutogenic approach implies that everyone is in some way always healthy, in contrast to the pathogenic paradigm where people are healthy or not healthy (Maivorsdotter and Andersson, 2020). This has implications for our conception of mental health and how PE can support ongoing discourses of mental health concerns among young people.

To avoid pathogenic limitations in PE, there has been a focus on finding ways to integrate forms of knowledge that are both theoretical (e.g. aspects of health) and practical (e.g. movement learning; Bjørke and Quennerstedt, 2023; McCuaig and Quennerstedt, 2018). To realign these aims, it has been claimed that PE should be

moving beyond the theory/practice dualism to develop a wide array of knowledge (e.g. in, through, and around movement; Bjørke and Quennerstedt, 2023; Lambert, 2020). It has been argued that a lack of integration between theory and practice has resulted in students formulating knowledge about movement while lacking understanding in or through movement (Quennerstedt, 2019). In response, Bjørke and Quennerstedt (2023) examined how students might reflect on embodied and situated meanings (i.e. what) through inquiry and discovery (i.e. how) to physically educate young people towards diverse, worthy aims (i.e. why), creating new movement cultures that are informed by a salutogenic approach.

Movement cultures have been generated through various educational contexts that promote positive health and wellbeing experiences through physical activity and movement (Redelius et al., 2015). A movement culture in PE involves the different practice of sports, exercise and outdoor activities that create meaning and value for the learner (Redelius et al., 2015). Competitive (e.g. ranking individuals or teams) and aesthetic (e.g. artistic expression) performance have been highlighted by Redelius et al. (2015) as examples of movement cultures in sport. Movement cultures go beyond activities to incorporate a wide range of interdisciplinary areas such as dance, music and outdoor education where there is no formal requirement to focus on isolated and decontextualised skills (Tolgfors et al., 2023), which have dominated the physical education-as-sport curriculum (Tinning, 2012). This creates opportunities for changes in traditional learning practices where the affective domain can be integrated and sustained.

Salutogenesis has been proposed as a means of understanding health that could support the integration of that affective domain in PE practice (Light and Harvey, 2015). A salutogenic perspective directly relates to this study due to the emphasis on positive student experiences (e.g. enjoyment, self-confidence, satisfaction) that promote health, wellbeing, and intertwine with other facets of PE such as physical, cognitive, and social learning outcomes. The rejection of a healthy and unhealthy dualism that a salutogenic perspective promotes is in line with Dewey's transactional view of learning and experience (Maivorsdotter and Andersson, 2020). Dewey uses his concept of learning to explain how individuals (i.e. young people) are connected to and part of the world in a circular, ongoing process (Dewey and Bentley, 1949; Maivorsdotter and Andersson, 2020).

Transactional Theory

Rejecting the dualisms such as healthy and unhealthy, mind and body, suggests that learning continually develops through interactions and experiences. Dewey's rejection of the mind-body dualism considered that the relation between affect and cognition is circular (Garrison, 2010). For Dewey, feelings (i.e. affect) refer to a basic mode of experience where action, emotion, cognition, and communication constitute an original unity; there is no dualistic separation of mind and body (Hohr, 2013). Learning is bridged by communication, through language and other means, between individuals and their environment (Andersson et al., 2018). According to Dewey, learning is not an acquisition of information of the world but is a process through which individuals

acquire “a complex and flexible set of predispositions-for-action” through interactions – or transactions – with their environment (Biesta, 2014; 37).

Dewey’s pragmatist stance in his transactional theory was a departure from traditional teaching methods that focused solely on the transmission of knowledge from teacher to student, to one that positioned the context as an essential component of deriving meaning from interactions (Biesta, 2014; Shilling, 2021). Dewey believed that education should be an active and collaborative process, in which students and teachers work together to construct knowledge through inquiry and reflection (Dewey and Bentley, 1949). According to Dewey, learning is not a passive activity, but rather an ongoing process of exploration, experimentation, and reflection that has informed a growing body of literature (e.g. Andersson and Garrison, 2016; Andersson et al., 2018; Andersson and Östman, 2015; Quennerstedt et al., 2011; Shilling, 2021). He argued that learning is most effective when it is connected to real-world experiences and is relevant to the interests and needs of the learner (Trask-Kerr et al., 2019). Drawing on related literature, observing learning in context using Dewey’s theoretical stance provides unique insights that can contribute to future practice (Klaar and Öhman, 2012; Maivorsdotter et al., 2014; Meager, 2018; Teo and Koh, 2020).

Dewey's notion of transaction – the idea that learning occurs through organic interaction and collaboration between individuals and their environment – has practical implications for researchers and educators (Teo and Koh, 2020). As part of this process, *ends-in-view* encourages individuals to be proactive, reflective, and purposeful in their pursuits, and to continually adapt and revise their goals in response to changing

circumstances and experiences (Andersson et al., 2018). In practice, this means that teachers could encourage students to ask questions, determine connections with their lives outside of school, or engage in dialogue with their peers. By doing so, students can shape their understanding and construct their own meaning (Bleazby, 2011; Garrison, 2010; Teo and Koh, 2020). Dewey argued that students should be given opportunities to explore and experiment with concepts in real-world contexts, rather than simply memorising information that inhibits high order thinking (Bleazby, 2015). This allows students to make connections between their experiences and the content they are learning, which can deepen their understanding and motivation to learn (Östman and Öhman, 2022).

In the context of this study, the transactional learning theory offers a valuable framework for research aimed at observing and understanding the learning process (Andersson et al., 2018; Biesta, 2014). Drawing on transactional theory, the Practical Epistemological Analysis (PEA) technique has been promoted as a dynamic and adaptive tool to understand the learning process in context (Wickman and Östman, 2002a, 2002b; Östman and Öhman, 2022). Both transactional theory and PEA emphasise the importance of context and experience in shaping individual development and knowledge acquisition (Andersson et al., 2018; Klaar and Öhman, 2012; Maivorsdotter and Quennerstedt, 2019; Quennerstedt, 2013; Shilling, 2018). Dewey's transactionalism highlights the dynamic and reciprocal relationship between individuals and their environment, while PEA focuses on the ways in which individuals engage with and make sense of their environment in order to construct knowledge (Andersson and Risberg, 2020; Lundvall and Maivorsdotter, 2021; Maivorsdotter and

Quennerstedt, 2019). Both transactional theory and PEA view knowledge as a practical and situated phenomenon, rather than an abstract or detached concept. In Dewey's view, individuals learn through active engagement with their environment and reflection on their experiences. PEA facilitates the analysis of practical meaning, analysing relations between different actions and their consequences when meeting the environment (Klaar and Öhman, 2012; Lundvall and Maivorsdotter, 2021).

Dewey's transactional approach offers a rich conceptual framework to analyse and deepen our understanding of the affective learning process (Andersson et al., 2018; Biesta, 2014). Drawing on existing literature (e.g. Östman and Öhman, 2022), it is possible to focus on interactions, experiences, contexts, and the dynamic nature of learning using the PEA technique. Research informed by transactional learning theory can contribute valuable insights into observing the affective domain and examining how and what pedagogical processes influence components of the affective domain. The use of the PEA technique has been advocated as a suitable resource in the data analysis process (Andersson and Risberg, 2020; Klaar and Öhman, 2012; Östman and Öhman, 2022; Shilling, 2018), that can address the research questions in this study. Dewey's theory of transactionalism and PEA share a common goal of understanding the dynamic and practical nature of knowledge acquisition and development. They both emphasise the importance of context, interactions, action, and reflection in this process, and could provide valuable, novel insights into how students engage with their environment to construct knowledge and develop practical skills in the affective domain.

While addressing the efficacy of transactional theory, it is also important to acknowledge the limitations of the theory with its focus of the individual and the environment. The environment can be considered as being embedded within broader sociological, cultural, political, and economic contexts. While the transactional approach can deepen our understanding of the learning process, the cultural structures which influence affective learning in PE (e.g. policy, social norms) become difficult to fully analyse. Therefore, an alternative theoretical perspective is required to understand the broader, cultural facilitators and barriers of the affective domain.

Practice Architectures

In this study, the purpose is to examine the affective domain in PE. To appropriately address the research questions (see p.3) it was necessary to zoom in and out on the learning that relates to the specific context of the practice (Larsson and Quennerstedt, 2016). A zoomed in perspective provides an opportunity to delve deeper into observed learning processes (Goodyear et al., 2021). Learning was positioned as a change in behaviour where individual's attached new meaning to novel experiences (Dewey and Bentley, 1949), therefore it is necessary to zoom out further beyond the observed interplay and pedagogical processes to understand the structural barriers and facilitators of affective learning. Dewey's transactional theory was not considered appropriate for this. A different theoretical perspective (i.e. practice architectures) would enable me to begin addressing the third research question (i.e. what the barriers and facilitators of affective learning within a PE context are).

The term practice architectures refers to the understanding of practice, where practice is considered situated and relational (Fabri and Jobér, 2023). Practice architectures are conceptualised as “conditions of possibility” that “enable or constrain the ways particular practices unfold” (Kemmis, 2021; 284). Understanding how and why these conditions prefigure, rather than predetermine, practices can support teachers and researchers examining the facilitators and barriers to affective learning. In this study, practice architectures was used as a metaphorical thinking tool to try to understand the experiences of the students, teachers, and school leaders related to the affective domain in PE (Enright and Gard, 2016; Hodkinson et al., 2008).

Kemmis and colleagues have highlighted the value of practice architectures to emphasise that practice involves individual learners as co-participants in and co-producers of arrangements that are spatially and temporally sensitive (Kemmis et al., 2014; Phelan and Griffiths, 2019). Together the semantic space (cultural-discursive), physical space-time (material-economic), and social space (political-social) “hang together” to constitute practice (Edwards-Groves and Kemmis, 2016; 87). Therefore, the learner (e.g. student) is integrated into the practice and context (Kemmis et al., 2014). For example, a student in a PE lesson becomes integrated into the practice of PE in the local and wider global and historical context. Drawing on the analogy by Kemmis et al (2014a), practice architectures in PE could include but are not limited to a students’ peers, teachers, siblings, parents, school leaders, sports halls, playing fields, balls, cones, bibs, school timetable, and curriculum design.

In response to established learning theory (e.g. situated learning theory; Lave and Wenger, 1991) and Schatzki's interpretation on learning and practice (Schatzki, 2017), Kemmis has challenged gaps in educational and sociological literature by proposing all practices in some way create knowledge (Kemmis, 2021). In identifying the deep structures and discourses within PE practices, it becomes possible to uncover underlying assumptions, values and beliefs that influence decision making and practices, providing insight into biases and cultural norms (Spaaij et al., 2023). Like broader educational practices, PE is often shaped by power dynamics, hierarchies and inequalities (Spaaij et al., 2023). Understanding the conditions (e.g. cultural norms) under which teaching practices occur could facilitate a change in PE practice that incorporates the affective domain.

Practice architectures can also highlight how practices transform over time by analysing and understanding the complex interplay of arrangements (i.e. political-social, material-economic, cultural-discursive; Phelan and Griffiths, 2019). The comprehension of traditional practice (e.g. physical education-as-sport) may inform decisions about what pedagogical change is possible (Phelan and Griffiths, 2019). Practice architectures offer a novel perspective and approach for teachers and school leaders to support sustainable changes to teaching practice, professional development, and curriculum design (Goodyear et al., 2016; Goodyear, 2017). Examining the conditions and arrangements (i.e. political-social, material-economic, cultural-discursive) that hang together in practice, it is possible to consider how practices change in response to changing conditions (Casey and Kirk, 2021c).

Practice architectures is presented as a theoretical framework for zooming out on the learning context (Larsson and Quennerstedt, 2016). Understanding the environment in which the study took place, in addition to how and why conditions prefigure practices, can support my examination of the facilitators and barriers to affective learning. This is necessary to analyse the conditions which may support innovation and reform teaching practice (Goodyear et al., 2016). Few studies have highlighted how innovation and change is possible in PE (Goodyear, 2017; Goodyear et al., 2016; Fernandez-Rio et al., 2017), therefore practice architectures is important to explore and examine the conditions enabling and/or constraining the affective domain if it is to be sustained in PE practice. Practice architectures theory can frame the examination of the affective domain by offering a holistic perspective on prefigured educational practices and their underlying political, cultural, and economic structures, norms, and discourses. By adopting this framework, in line with other literature (e.g. Phelan and Griffiths, 2019), a deeper understanding of practice enabling and/or constraining the affective domain can contribute to novel insights into a PE context that could facilitate sustained change in teaching practice.

Chapter Summary

In this chapter, I have argued that there are gaps in our understanding of the affective domain in a PE context. Further examination of the affective domain is required to address specific gaps related to the conceptualisation, pedagogical processes, and barriers and facilitators of affective learning. In the global context of mental health

issues, concerns for wellbeing, and precarity among young people, this chapter argues that PE is potentially well positioned to support and guide young people through these challenges. A strong focus on a physical education-as-sport curriculum and physical learning outcomes potentially constrains the affective domain and further understandings of it. Therefore, further empirical investigation is crucial, with the research questions of this study outlined in the next section.

Research Questions

This chapter has argued that despite the attention given to the affective domain in PE to support contemporary issues facing young people (i.e. mental health disorders), there remains gaps in the literature. If policy and practice is to change in a sustained manner, it is necessary to identify the key gaps that can be investigated and provide original and significant contributions to existing knowledge. Specifically, areas that need further examination include conceptual understanding of the affective domain by students, teachers and school leaders, effective tools to observe and/or measure affective learning, conditions that enable and/or constrain the affective domain in PE. Therefore, this thesis has focused on three distinct research questions:

1) What indicators of the affective domain are observable in a PE context?
2) What pedagogical processes influence indicators of the affective domain, and how?
3) What are the barriers and facilitators of affective learning within a PE context?

It has been argued in Chapter 2 that methodological challenges exist in the observation of affective learning, understanding the mechanisms of learning in the affective domain, and the identification of facilitators and barriers of affective learning within a PE context. In the following chapter I will outline my methodology and methods for collecting data that seek to answer the three research questions of this study (see p.3 or p.60) and overcome the challenges identified in the Review of Literature.

CHAPTER 3: METHODOLOGY AND METHODS

Introduction

This chapter will outline my methodological considerations through my pragmatic social constructivist stance and exploratory research focus in relation to the research questions outlines in Chapter 1. Secondly, I will discuss the case study research design adopted to frame the study and answer the research questions. Following this I describe the methods of data collection, explaining the research context and setting, design and the participants, ethics, pilot study, data collection methods and data analysis. I finish this chapter with an outline of my perceptions of quality and rigour in this research study.

Methodological Considerations

Research Stance

The overarching purpose of this study is to understand the affective domain in a PE context, focusing on observable elements, pedagogical practices, and barriers and facilitators to supporting affective learning. Given the limited research in this area (see Chapter 2), the research focus of the study was exploratory. Employing an exploratory research approach can assist in filling gaps in knowledge and understanding by

adopting a different perspective or generating new insights (Leavy, 2017). In contrast to explanatory research, which is predominantly focused on explaining relationships (van Manen and van Manen, 2021), exploratory research seeks to understand a new or under researched topic (Stebbins, 2001).

In this thesis, the methodological approach and methods are centred around my dual role in this research as a teacher-researcher. Thomas (2017) argued that this dual role provides knowledge of 'research in practice', and this research stance provides insights and understandings of educational practice that is often otherwise inaccessible to more traditional outsider roles. Hence the dual positioning of a teacher-researcher in this study provided an opportunity to unpack the depth and complexity of the affective domain in context, and from an insider perspective. This is significant, given that knowledge on the affective domain, is dominated by quantitative empirical evidence (see Chapter 2). In turn, this thesis is grounded within an interpretative qualitative paradigm, and the research questions will be answered through a pragmatic social constructivist lens.

Variations of interpretivist (e.g. subjectivist, constructivist, and constructionist) stances have been stated as the most common stances in qualitative articles within the field of sport psychology (McGannon et al., 2019). All of these stances are grounded in the value of personal subjective knowledge and link knowledge with real-life experiences (Azzarito and Ennis, 2003). In turn, interpretivists seek to inquire from the perspective of those they are researching (Hammond, 2013). Knowledge, or knowing, in this regard is not fixed or pre-determined, but rather open-ended and flexible (Crotty, 2012). The

explicit acknowledgement of ontology and epistemology are necessary to demonstrate clear alignment between methods, analysis and findings (Smith and McGannon, 2018). In this study, I assumed a pragmatic social constructivist (epistemology) and relativist (ontology) stance through which I would collect, analyse, and make meaning of the data that intended to address my research questions.

My philosophical underpinnings are tied firmly to my methodological decisions, and affect how I selected the design, methods, and analytical techniques to answer my research questions. Overall, in this study, a qualitative paradigm was used to gain a deeper insight into the mechanics and processes of affective learning, specifically examining the interactions that occur between students and the teacher-researcher. Braun and Clarke's (2019; 591) view that "qualitative research is about meaning and meaning-making, and viewing these as always context-bound, positioned and situated" holds significance in the methodological choices in this study. Reality was considered multiple; reality and knowledge occur through my own unique world view and the meaning of events interpreted by other participants in the study. Knowledge is social and contextual; therefore, I considered learning, and therefore affective learning, as a social process, situated and contextual. Like Dewey (1949) and Garrison (2010), learning is ongoing and involves constantly and actively engaging with the world, influencing my pragmatic social constructivist stance.

To unpack this further, there are many ways in which qualitative researchers can position their research aims and assumptions. Relevant to this research is pragmatism. Although not easy to define (Hammond, 2013), classic pragmatists in the United States

such as James (1884) and Dewey (1949), and neo-pragmatists such as Rorty (2000), broadly advocated for a philosophical position that could hold something as true because ‘it works’. Dewey’s (1938) view on pragmatism was imbued in American democracy. As a progressive educationist, influenced by Hegel, Kant, and Rousseau, Dewey surmised we would learn from our experiences, transactions with other organisms, and build upon past experiences towards an ends-in-view (Andersson and Garrison, 2016; see XXX). The ends-in-view provides the meaning and consequence, or process and product, of the learning experience (Andersson et al., 2018). Methodologically this form of pragmatism in education is about understanding the interdisciplinary and interconnectedness of learning (Clarke and Visser, 2019).

From a teacher-researcher perspective, the importance of examining and acknowledging one’s epistemological and ontological belief is complex. In line with Saunders and colleagues (2019), the process of exploring, understanding, and identifying my research stance required an element of reflexivity. As an early-career researcher, the process of settling on my research stance required deliberation on how I think and act, examining my beliefs, and positioning this appropriately within the research topic. Clarke’s experience of ‘finding’ or ‘choosing’ a methodological approach that would answer a series of research questions resonated in my context as a teacher-researcher (Clarke and Visser, 2019). She described it as “the more reading that was undertaken about traditional and pure methodologies, the more my uncertainty grew about their ability to answer the research question or about the compromises necessary to force the research to sit within the boundaries of these methodologies” (Clarke and Visser, 2019; 7). My research questions lie in a context

that desires practicality while necessitating academic originality. Andersson et al., (2018) proposed that the lens of pragmatism lends itself to the co-construction of knowledge through a participative design. Adopting the role of a teacher-researcher with a pragmatic stance that utilised practical analytical methods to collect and interpret data was therefore pertinent to this study. In the following sub-section, I discuss why a case study design was considered appropriate for this study.

Case Study Design

In this study, a single instrumental case study, informed by Stake's (2005) approach, was implemented. A Stakian approach was considered appropriate because it provided a flexible framework to explore and examine the affective domain in-depth within an international school PE setting. Furthermore, an instrumental case study design provided the means to generate novel, original insights, and an in-depth understanding of the affective domain in PE through my role as a teacher-researcher.

In the context of this study, a case study is the exploration of "an event or phenomenon in-depth in its natural context" (Crowe et al., 2011; 1). It is a common research design that has been implemented in various related fields and disciplines, including health (e.g. Ashdown-Franks et al., 2022; Harris et al., 2023), sport coaching (e.g. Hodge et al., 2014; Wright and Irwin, 2018), and PE (e.g. Dyson et al., 2021; Harris and Leggett, 2015; Wallhead and Dyson, 2017). Specifically connected to the aims of this study, case studies have been used to explore social-emotional orientations of novice PE

teachers (Zach and Rosenblum, 2021) as well as analysing changes in affect when implementing a Sport Education model in PE (Perlman, 2010).

There are two prominent paradigmatic approaches to case study design: social constructivist and post-positivist (Hyett et al., 2014; Yazan, 2015). A social constructivist approach has been advocated by scholars such as Stake (2005), and Merriam (2015; 2019), while Yin (2013) and Eisenhardt (2016) have adopted a post-positivist paradigm. The result of differing paradigmatic stances influences the definition and design of a case study, methods for gathering and analysing data, and how validity of data is conceptualised (Yazan, 2015). The post-positivist paradigm aims are typically explanation and control, while the social constructivist paradigm is interested in understanding and revealing participant experience (Hodge et al., 2014).

Yin's post-positivist approach to a case study is grounded in a highly structured design that is defined at the onset of the research. Yin's case study methodology is often informed by a mixed method approach to data collection (Hyett et al., 2014). Yin's positivistic focus emphasises the importance of objectivity, validity, and generalisability as markers of case study research quality (Yin, 2013). Yin (2013) stated four strategies to develop validity through triangulation: 1) data source, 2) analyst, 3) theory, and 4) methods. A structured case study framework conceptualised by Yin ensures that all elements of the case are measured and adequately described (Hyett et al., 2014). However, a tightly regulated and structured approach would constrain the collection and analysis of data in this study that was grounded in pragmatic social constructivism, which attempted to understand multiple features of the affective domain. Furthermore,

the approach would limit the opportunity to qualitatively explore the richness of the affective domain in PE.

Eisenhardt's (2016) multi-case theory-building approach attempts to gather compelling data that provides rich and unexpected insights to enhance research quality. The 'Eisenhardt Method' (see Eisenhardt, 2021) draws on Glaser and Strauss' approach to grounded theory, and the iterative constant comparison of data and theory by implementing a multi-case study design, to address research questions that have little prior theory or empirical evidence. Comparably, Merriam's approach to case study design complements both Yin's highly structured case study design and Stake's more flexible perspective (Yazan, 2015). Merriam's prescriptive and detailed design does allow for flexibility and is reflected in Merriam and Grenier's (2019) six strategies to enhance a case study's validity (member checks, peer review, researcher's position, engagement in data collection, maximum variation, audit trail, rich and thick description).

The lived experience in case study research is strongly represented in the work of Stake (Schwandt and Gates, 2018). Stake's approach is grounded in constructing meaning from case studies, rather than discovering meaning (Yazan, 2015). Stake viewed a case study design as flexible, where changes to the composition of the case can occur throughout the research process (Abma and Stake, 2014). Similar to Yin, Stake proposed four strategies for triangulating data and enhancing the validity of results: 1) data source, 2) investigator, 3) theory, and 4) methodological (Yazan, 2015). Unlike Yin, who has suggested that the purpose of using multiple sources is to assist

the researcher in identifying convergence of findings, Stake suggested that triangulation can also be used by researchers to identify divergence (Boblin et al., 2013).

A Stakian approach is a common case study design in various research disciplines (see Hyett et al., 2014). Stake's interpretative orientation to case study design includes "naturalistic, holistic, ethnographic, phenomenological, and biographic research methods" (Stake, 1995; xi). His case study methodology incorporates four distinct characteristics: 1) a *holistic* case is inseparably linked to the context, 2) an *empirical* case places the emphasis on observables and is naturalistic, 3) the researcher relies on *interpretation* of the context and data, and 4) if a case is *emphatic,* it reflects the experiences of the participants from an emic perspective (Yazan, 2015). All four characteristics were pertinent to this study, as I aimed to better understand conceptual links between the affective domain in PE and the research context through observations and interviews, and in ways that embody a pragmatic philosophy, and that seek to understand the affective domain from multiple perspectives.

The differing approaches of Stake, Merriam, Yin, and Eisenhardt provided me with insight into the breadth, depth, and flexibility of a case study design. A lack of empirical research on the affective domain in PE and within an international school setting has been presented as a rationale for this study. A case study can provide rich, detailed data, with multiple types of data gathering (e.g. interview and observation) providing novel insights (Harris et al., 2023; Hodge et al., 2014). Stake advocated for multiple data collection and analytical methods to be adopted to further develop and understand

the case, shaped by context and data (Stake, 2005; Hyett et al., 2014). The exploration of a complex and multifaceted case supported the aims of this study examining the affective domain. Often factors (e.g. social, cultural, historical, economical) that influence cases can be identified and scrutinised as part of the study (Uhlenbrock and Meier, 2021).

There are many ways a case study can function in a research project (Leavy, 2017), owing to its difficultly to universally define and conceptualise (Schwandt and Gates, 2018). For example, the function of a case study can be descriptive, explanatory, instrumental, collective, intrinsic, and exploratory (Crowe et al., 2011; Hodge and Sharp, 2016). In addition, framing the case(s) as either a single case or multiple cases can impact the analysis and uniqueness of each case (Nyabando and Evanshen, 2022; Yin, 2013). Two functional case study designs were potentially applicable to this research: intrinsic and instrumental case study (Stake, 2005). An intrinsic case is the sole focus of the research, while an instrumental case study is focused on an issue around the case (Hodge and Sharp, 2016). Similar to Hodge et al. (2014), an instrumental case study was considered appropriate to my research. The case was the international school, while the focus was on the issue of interest i.e., the affective domain in PE. In the following sections of this chapter, I show how the methods that I employed aligned with the case study design, and that facilitated answering the study's three research questions (see Chapter 1).

Methods

Context

The study took place at an international school located in Singapore. Singapore's ethnic and cultural composition is diverse, with 27% of the population considered a non-resident (MOM, 2023). Non-residents are predominantly mobile, flexible citizens from economically developed countries (Kenway and Fahey, 2014). At the time of this study, it was not possible for a child to attend a Ministry of Education school without a Singapore passport or permanent residency visa; therefore, children who fall into 27% of non-residents must attend what is commonly referred to as an international school. This has resulted in an overly competitive environment of private (for-profit and non-profit) schools on the island. There were 65 international schools in Singapore at the time of this study, 34 offered a British curriculum, 26 offered the International Baccalaureate (IB), three offered a Singapore curriculum, and two an American curriculum. The leading language of instruction was English (64 out of 65 schools).

Setting

The international school in this study was co-educational and offered a British-IB blended curriculum, with PE positioned as a core subject timetabled weekly in the curriculum. The time dedicated to PE ranged from 60-90 minutes per week for all students, with a variety of land-based (e.g., team games, health-related fitness,

outdoor education) and water-based activities (e.g., swimming, water safety, water polo) provided. In addition, a wide range of after school sport options were offered as co-curricular activities, which students could select to take part in.

At the time of the study, there was a student cohort of 2886 students aged 2-18 years. Students represented 55 different nationalities, many holding two or more passports. The top countries represented by nationality were economically developed countries (UK – 36%; Australia – 11%; China – 11%; Singapore – 6%; India – 5%; USA – 5%; Other – 26%). This offered a rich and diverse mix of cultural backgrounds. The prestigious reputation and relatively high tuition fees also positioned the school as an elite global school (Kenway and Lazarus, 2017), typifying characteristics of neoliberalism in education (Evans and Davies, 2015, 2014).

At the school, there were 440 students in Key Stage 1 (age 5-7 years), equally divided between two grades, or year groups: Year 1 (age 5-6 years) and Year 2 (age 6-7 years). Physical activity opportunities in the curriculum were split into two: PE and swimming. Every student aged 2-10 years had access to one swimming lesson per week, while students aged 11-18 years would have access to a unit (5-6 weeks) of swimming each academic year. Each swimming class was 30-40 minutes in duration. There was a separate department of swimming coaches who were responsible for the design and implementation of the swimming curriculum. PE was further split into three sections of the school: Lower School, Middle School, and Upper School.

The Upper School (12-18 years) provided a choice to students for their PE lessons.

Students were able to choose between up to 8 physical activities and sports (e.g., fitness suite, basketball, badminton) per unit and took part in mixed gender groups. Students who demonstrated specific sport skills would be encouraged to sign up to after school sport teams and fixtures. In the Middle School (age 7-12 years) students were taught a selection of sports in sets according to their ability judged by their PE teacher. The top sets (high ability) were single gender, and the lower sets (low ability) were usually mixed gender. There were 22-24 students in each set, and students rarely changed groups unless the teachers felt that there was a significant discrepancy in their technical ability in comparison to the rest of the group. There was a priority placed on sport skill development with the intention of maximising representation and success for the after-school sports teams, in addition to feeding into the gifted and talented pathway. Both viewed as key focus points in the marketing of the school.

The expectation for Lower School (age 2-7 years) PE was to develop physically competent students who could represent the school in the Middle and Upper School sport competitions. However, Lower School PE operated differently due to there being no representative sport opportunities for students for that age group and as the gifted and talented pathway for PE and sport began in Middle School. Students were kept and taught in their form class, which were mixed gender, mixed ability classes. At Key Stage 1 (Year 1 and Year 2), two classes of 22 students attended their PE lesson simultaneously in adjoining sports halls. This provided opportunities to mix the classes for PE lessons, segregating by gender and/or ability if necessary. The Lower School PE curriculum was aligned with the Middle and Upper School programme. That is, the curricular aligned with what Kirk (2010, 2013) described as influenced by a traditional

British public school ethos, and privileged the development of sport-techniques through a multi-activity approach.

Anecdotally, participation rates were higher for Lower School PE, declining gradually as students entered Middle School and finally Upper School. Beyond the multi-activity approach, moral values and the development of character traits were considered important in PE lessons. There was an assumption that sport is a vehicle for character development. The articulation of character development in PE sought to create the appearance of virtuous students, within which egalitarian values appeared to be of importance. This has been considered a common approach for private international schools to adopt when attempting to balance out privilege and elitism (Kenway and Fahey, 2014).

Amendments to the Planned Research

The COVID-19 pandemic was a significant event in Singapore in March 2020. In mid-2019 I had received ethical clearance (ERN_18-1712, 13 May 2019) to implement a Participatory Action Research (PAR) design study in three phases to address each research question (RQ). PAR was selected to explore the relationship between the teacher-researcher and students when co-constructing understandings of the affective domain in PE. The intention was for participants to co-create meaning by identifying and interrogating experiences viewed on the video recordings within lessons. This research design would enable the teacher-researcher and students to observe

components of affective learning in a cyclical manner that could inform the design and delivery of curriculum content (Casey and Larsson, 2018; Kemmis, 2010), identify pedagogical processes that impact affective learning and understand how these change over time. The overall intended aim was to understand how to improve affective learning in PE.

As a consequence of COVID and the impact of safe management measures imposed by the Singapore government, my planned research questions were modified. In particular, the ability to map change in affective components over time was not possible to plan or coordinate in a systematic way. Instead, the final research questions devised for this study (see Chapter 1) considered exploring the affective domain using a case study design, in place of PAR.

In relation to adaptions to data collection methods, video recording and Stimulated Recall Interviews (SRI) took place in February 2020 to observe components of the affective domain in PE (RQ1). In March 2020, the Singapore government implemented a country-wide circuit breaker initiative (i.e., lockdown), transferring what had been a face-to-face teaching and learning format to a completely online platform. As with many other countries globally, it was impossible to predict when, or if, routines would return in the previous format. This presented a problem for data collection. Between April and September 2020 there was a return to face-to-face teaching and learning with intermittent periods of partial online learning or threats of a return to complete online learning. Through discussions with my supervisors, it was decided to continue video recording lessons, but it would not be possible to continue using the participatory

phased approach for two main reasons: 1) further lockdowns were still a possibility and could occur with little warning, and 2) the academic year ended in June 2020, and the pupil sample of participants could potentially change, as the with the group of students would move to the Middle School at the beginning of the new academic year. The SRIs were initially impacted by the new return to school protocols. During May and June 2020 there was a limit of five individuals socially interacting in-person together. The sample size of 5 students in the SRIs, plus one teacher-researcher, meant that the SRIs could not continue in the previous format.

There existed a strong feeling of precarity, fear and insecurity both personally and professionally throughout the rest of 2020 and into 2021, which was reported as a common set of feelings at the time (Varea et al., 2020). It was not until February 2023 that the government of Singapore lifted all COVID restrictions and safety measures implemented in March 2020. Overall, the challenges of COVID required various adjustments to collecting data in this study. One modification of the methods was the addition of focus group interviews with students and individual interviews with teachers in the school. The inclusion of these data sources was necessary due to prevailing restrictions within Singapore and the lingering threat of returning to online learning. Despite these constraints and alterations to the data collection methods, it was possible to address the research questions of this study by drawing on multiple perspectives. The following sections outline how this was accomplished in more detail.

Participants

The participants were one teacher-researcher (me), 176 students aged 6-7 years from 4 classes, and 11 teachers who held a variety of positions across the school. The inclusion of participants from across the school provided a broad range of voices to the study beyond that of mine as the teacher-researcher. The portrayal of student voice has been suggested as essential to understanding student learning and student experiences (Lim, 2022). To avoid privileging my own voice, or that of other adults, it was necessary to collect data that included and conveyed student voice. All participant names in the following sections are pseudonyms, for anonymity purposes.

Teacher-Researcher

I – as the teacher-researcher – adopted a hybrid role of both a teacher and a researcher. As I was a teacher in the school, I was positioned in a legitimate social role that supported both my entry and access to the context and participants. However, my role in the teaching and research process was complex as I was participating and observing simultaneously. Similar to the 'crossing fields' role described by Townsend and Cushion (2020), I moved between being in the field (teacher) and theoretically analysing that field (researcher). Nonetheless, Lewin (1946; 34) argued that research conducted by a specialist in their context, will "help the practitioner" and their peers to develop their knowledge and understanding of that context. Lewin's conception of social change through what is now known as action research drew parallels with

Dewey's conception of learning from experience (Rauch et al., 2019) – a key theoretical underpinning of this study (see Chapter 2). Similarly, Stenhouse (1975) and later Elliot (2004) advocated the teacher-researcher role as a way to understand pedagogy. Overall, through the teacher-researcher role I was deeply embedded in the social, cultural, and political make-up of the school context, and this enabled me to understand pedagogy at a deeper level to answer my research questions.

At the time of data collection, I was an employed member of staff at the school whose primary responsibilities were to enhance the teaching and learning of the Lower School PE programme. I was a male teacher, 32 years of age, and a UK citizen based in Singapore. I had 7 years teaching experience, employed for 5 years by the school. My general job scope involved teaching PE alongside one other teacher (i.e., Head of Lower School PE), working with students aged 3-7 years.

Student Participants

There were 176 student participants in total (m: 90, f: 86; age range: 6-7 years) that were recruited from the Lower School (Year 2). Students were involved in the study at different stages. In Phase 1, and as part of the class-based PE lessons, 88 students from 4 classes were recruited to identify observable components of the affective domain. The inclusion criteria were eligible students who regularly took part in their weekly 60-minute PE lesson. There were 220 students in Year 2, any students who were not in one of the four classes selected were not included in the study. No students

from the four selected classes were excluded. The sample of four classes represented students from across the year group and wider Lower School; age 6-7 years, average 11 males and 11 females per class, 22 nationalities, 22 students listed as required additional educational needs (AEN), and nine students received English-as-a-second language (EAL) support.

In Phase 2, a sample of students from each of the four classes in Phase 1 were asked to participate. Five students from each class took part in stimulated recall interviews (SRIs). The inclusion criteria for the SRIs were students who took part in Phase 1 and were video recorded in the lessons. In the lessons students took part in small teams, their Houses (i.e., pastoral sub-unit of the school). One House was selected for the SRIs based on the frequency of students from that House that appeared in video recorded footage. Students from the remaining three Houses were excluded. The sample of students largely represented the 88 students selected in Phase 1; age 6-7 years, 10 males and 10 females were recruited across the four classes, 11 nationalities, six required AEN, and four received EAL support. Further details are provided in Table 1, including students ability reported in their summative assessments using the English National Curriculum framework (DfE[1], 2013).

[1] The Department for Education (DfE) in England is a government department responsible for children's services and education, from early years to higher education.

Table 1. Student Profiles for Stimulated Recall Interviews in Phase 2.

Name	Class	Gender	Age	Nationality	Ability[2]
Chloe	Class 1	Female	7	France	Working Above
Momoka		Female	6	Japan	Working At
Jane		Female	7	USA	Working Above
Ana		Female	6	Croatia	Working At
Adam		Male	6	United Kingdom	Working Below
Harry	Class 2	Male	6	Australia	Working At
Dan		Male	7	United Kingdom	Working At
Claire		Female	7	Australia	Working Above
Tijah		Female	6	Malaysia	Working At
Saanvi		Female	6	India	Working Below
Dai	Class 3	Male	6	Vietnam	Working At
Reiko		Female	6	Japan	Working At
Gijs		Male	6	Belgium	Working At
Rian		Male	6	India	Working At
Sora		Male	7	Japan	Working Above
Fox	Class 4	Male	6	Australia	Working At
Cheng		Female	6	China	Working Below
Kai		Male	6	United Kingdom	Working Above
Franklin		Male	7	United Kingdom	Working At
Zoe		Female	6	United Kingdom	Working At

In Phase 3, student focus group interviews and individual teacher interviews took place. Focus group interviews were conducted with students; individual interviews were conducted with teachers. The criteria for student inclusion in the interviews were those students who had taken part in the SRIs. No additional students were interviewed; student particulars remained similar – age 6-7 years, 10 males and 10 females from four classes, 11 nationalities, six AEN, and four EAL. Due to COVID restrictions of socialising in groups of five, each group of five students were divided into a group of two and group of three. This approach of conducting two interviews allowed me as the teacher-researcher to remain within the government restrictions

[2] Students' 'Ability' was determined by their target grades at the time of data collection. The target grades were relatable to the English National Curriculum assessment framework for PE at Key Stage One (DfE, 2013). Students *Working At* meant they hit national targets for various movement patterns, fundamental movement skills, and team games. *Working Above* indicates students were performing above the national target, while *Working Below* indicated students were developing in certain key areas.

relation to social interactions.

Teacher Participants

In Phase 3, one-to-one interviews were conducted with teachers. The inclusion criteria were teachers from the Lower School or from the PE department. An invitation to take part in the study was sent to staff within the PE department and Lower School. The aim was to broaden the data with additional voices outside of the teacher-researcher and students. There were no specific exclusion criteria for recruiting teachers to take part in the interviews.

In total, 11 teacher participants were recruited; teacher profiles are stated in Table 2. Teachers originated from the UK (n=6), Australia (n=2), Ireland (n=1), New Zealand (n=1), and Singapore (n=1). The gender split was seven females and four males, with mean duration of teaching experience of 15 years (range 2-26 years). Seven teachers in the sample were from the PE department that taught across the Lower, Middle, and Upper sections of the school. Four were classroom teachers but had expressed a personal and professional interest in PE and sport. Four of the 11 teachers had leadership responsibilities within their specific domain of the school (e.g., Head of Department, Deputy Head of School).

Table 2. Teacher Profiles.

Name	**Gender**	**Nationality**	**No. of Years Teaching**	**Role in the School**

Ryan	Male	United Kingdom	2	Teacher of Physical Education (Middle School)
Grace	Female	United Kingdom	8	Teacher of Physical Education (Middle School)
Hazel	Female	Ireland	10	Classroom Teacher (Lower School)
Ava	Female	Australia	13	Classroom Teacher (Lower School)
Lucy	Female	United Kingdom	15	Head of Upper School Physical Education
Oliver	Male	United Kingdom	16	Classroom and Physical Education Teacher (Middle School)
Ben	Male	New Zealand	18	Deputy Head of Lower School
James	Male	United Kingdom	20	Teacher of Physical Education (Middle School)
Naomi	Female	United Kingdom	20	Head of Middle School Physical Education
Kylie	Female	Australia	22	Head of Lower School Physical Education
Vanessa	Female	Singapore	26	Teacher of Physical Education (Middle School)

Ethics

Ethical approval was granted by the University of Birmingham's Science, Technology, Engineering and Mathematics (STEM) Research Ethics Committee for the study protocol, informed consent, and other relevant documentation (ERN_18-1712, 13 May 2019). Substantial amendments that required review by the Research Ethics Committee were not implemented until the Committee granted a favourable opinion (ERN_18-1712A, 12 October 2020). All documentation shared with the Committee was held in a password encrypted hard drive.

The ethics process was guided by the British Educational Research Association protocols (BERA, 2018) and recent studies critiquing ethical issues in qualitative research such as consent and anonymity (Tamminen et al., 2021). For students eligible to participate in the study, parents were given written detailed information about the study, what their child's participation involved and how their child's data would be processed. The school was asked to assist in the distribution of this information to parents in different formats (e.g., email and post). Parents were asked for active consent and were given the opportunity to complete and return a form to opt their child in to taking part in the study. Prior to data collection students received information about the study, including what they were being requested to take part in and how their data would be processed. Assent was obtained from students whose parents had not opted them out of participating, where students were asked to complete an assent form or provide written assent. Teacher participants were given detailed written information about the study, what their participation would involve and how their data would be processed. They were asked to complete a written consent form.

This study involved exploring the teacher-researcher's typical teaching practices, and therefore any risk or harm to participants was not expected as a direct result of the research. Participants had the right to withdraw from the study. If the participant withdrew within 4 weeks of the last point of data collection, they could request for their data to be deleted. The exception to this was data provided through focus group interviews. If a participant withdrew after participating in a focus group interview, their data would remain in the study and be included in the analyses as it was not possible

to separate and remove individual participant data from a focus group interview. These procedures were outlined to participants as part of the informed consent process.

Pilot Study

The purpose of the pilot study was to evaluate the feasibility of collecting data in relation to my first research question: what components of the affective domain are observable in a PE context? Data gathering methods for the pilot first involved compiling the literature reviewed in Chapter 2 to identify aspects of the affective domain that could be observable in practice and to create an observable (affective) learning observation framework to pilot, building on the work of Dudley et al (2015). The observable learning observation framework consisted of four groups that were further sub-divided into affective outcomes that may be observed in a PE lesson. These consisted of Attitude (Valuing Physical Activity), Behaviour (Self-control, Participation, Effort, Self-direction, Caring), Emotion (Seeking, Play, Panic, Rage, Fear), and Social Attributes (Empathy, Assertiveness, Consensus, Fair Play).

One class of 22 students (age 6-7 years, 11 male, 11 female, eight nationalities, six registered as AEN, two receiving EAL) were selected to take part in the pilot study. The class was chosen because it represented the year group demographically and the class teacher (i.e., another teacher in the Lower School) shared a willingness to support the study. Three, 60-minute lessons were video recorded with two cameras: a fixed camera (FHD 1080P camcorder wide-angle lens with microphone attachment)

and a mobile camera (GoPro Hero Session with chest mount strap). The focus of the three lessons was on fundamental movement skills and team games. Each lesson began with a series of fundamental movement skills, such as running, jumping, and hopping. After these warm-up movements had been completed, students took part in a series of modified team games such as Rob the Nest (Lesson 1), Capture the Flag (Lesson 2), and Captain's Ball (Lesson 3).

After video recording the lessons, data analysis of the footage took place. This involved employing a systematic observation approach of momentary time sampling every 5 mins (Hyndman and Mahony, 2018). Momentary time sampling is a systematic observation technique that involves estimating or recording the frequency of behaviour within specified time intervals (Volpe et al., 2005). Several advantages of momentary time sampling have been reported (McKenzie and Van Der Mars, 2015). Namely, its flexibility and reduced burden on the observer, replicating what would be realistic in an ordinary teaching context (McNamee and Mars, 2005). The focus was on affective components that occurred exactly at the end of each interval. A descriptive approach was applied to understand the frequency that the affective components outlined in the framework were observable (see Table 3).

Table 3. Systematic Observed Learning Framework Findings.

Affective Component	**Lesson 1 (n=)**	**Lesson 2 (n=)**	**Lesson 3 (n=)**	**Mean (SD)**
Attitude - Valuing Physical Activity	4	9	8	**7.00 (±2.65)** 7.00 (±2.65)
Behaviour - Self-control - Participation	 12 6	 11 9	 11 9	**37.00 (±6.83)** 11.33 (±0.58) 8.00 (±1.73)

- Effort - Self-direction - Caring	4 10 1	7 11 0	9 9 2	6.67 (±2.52) 10.00 (±1.00) 1.00 (±1.00)
Emotion - Seeking - Play - Panic - Rage - Fear	 7 6 0 0 0	 8 6 3 0 0	 9 9 1 0 0	**16.33 (±4.26)** 8.00 (±1.00) 7.00 (±1.73) 1.33 (±1.53) 0.00 (±0.00) 0.00 (±0.00)
Social Attributes - Empathy - Assertiveness - Consensus - Fair Play	 2 5 3 5	 3 5 1 2	 2 3 3 3	**12.33 (±4.41)** 2.33 (±0.58) 4.33 (±1.15) 2.33 (±1.15) 3.33 (±1.53)

The findings presented in Table 3 provided insights into observable components of the affective domain. Aspects of student behaviour (i.e., self-control and self-direction) were observed more regularly than other categories. Rage and fear were not observed at all using the momentary-time sampling method. Despite observing affective components, a descriptive analysis approach did not allow for the affective learning process to be identified, only the behaviour or emotion representing affective learning.

For me, COVID stimulated a reflexive reaction and change of methods and analysis that would consider the how and why of affective learning. Quennerstedt et al. (2014) focused on exploring how students make new meanings by recalling previous experiences and relating them to their current situation. In Quennerstedt and colleagues' (2014) study, it was found that analysing entire video recorded data and recall interviews allowed the researchers to get closer to the complex processes of learning in PE. Therefore, and because of the pilot study findings and the need to adjust my methods due to COVID restrictions, a different analytical approach was required for my study moving forwards. As will be explained in the following sections,

rather than analysing the data using systematic observation methods, I chose to adopt the Practical Epistemological Analysis (PEA) technique to engage with the video-recorded data in a way that could interpret affective learning and affective learning processes. More specifically, PEA provided a conceptual framework to generate in-depth understandings of affective learning and in the context of movement and what students *do*. PEA will be discussed in more detail in the *Data Analysis* section.

Data Collection

A multi-method approach was adopted to capture the messiness, complexity, and nuanced aspects of affective learning in PE. Three distinct data gathering methods were employed in this study to address the research questions: 1) Lesson Observations (RQ1, RQ2), 2) Pupil Stimulated Recall Interviews (RQ1 and RQ2), and 3) Focus Group Interviews with students and one-to-one interviews teachers (RQ2, RQ3).

Video Recorded Lesson Observations

Video recorded observations generate data that have developed understandings of social practices in a range of educational contexts, that are similar to the focus of this study. For example, video recorded lessons allowed for multimodal interactions among primary age children in PE to be observed (Smee et al., 2021). Other uses of video

recorded observations include, identifying the implicit mechanisms of power and group dynamics in PE (Barker and Quennerstedt, 2017), exploring pre-schoolers social-emotional competencies (Classen and Cheatham, 2015), interrogating decision-making and learning in PE (Aarskog et al., 2018), understanding the process of creativity in PE (Hyndman and Mahony, 2018), analysing the aesthetical experiences of primary school children (Meager, 2018), examining pre-schoolers physical meaning making (Klaar and Öhman, 2012), and illustrating movement learning and artistic expression of young people in PE (Andersson and Risberg, 2020). Overall, the evidence from prior research indicates that video captures the multimodal and often implicit interplay of learning, in this case affective learning, in PE lessons. In turn, video recorded lesson observations were considered an effective approach to data collection in this study.

Building on prior literature, video recorded observations were deemed appropriate in this study as a method for gathering data for several reasons. First, observations provided data on what participants did, not just what they said. Put another way, observations aid the researcher to focus on the meaning making processes rather than the product of learning (Klaar and Öhman, 2012). This is essential for collecting data with young people who may struggle, or are not able, to fully articulate their thoughts, views, and opinions in the same way that an adult could. Second, the data from observational methods can capture the multimodal actions and interactions of participants in context and in action (Smee et al., 2021). Notably, this is a key advantage, as accurately remembering and articulating affective moments or components has been demonstrated to be difficult (Andersson and Garrison, 2016).

Third, video recorded observations could be viewed multiple times, whereby multiple affective components can be captured simultaneously (Jones et al., 2022), allowing for the re-examination of data when necessary, and providing a data source that is full of complexity and nuance.

With these reasons in mind, I gathered data using video recorded lesson observations. Video recordings took place during students regular class/PE time. The intention was for students to be video recorded as part of their usual school routine and timetable, minimising disruption to students' typical schedules, while recording authentic behaviour in context. Two cameras were employed, one fixed and one mobile, to capture the context, affective components, and pedagogical processes within each lesson.

The fixed camera (FHD 1080P camcorder wide-angle lens with microphone attachment) was attached to a tripod and placed in the corner of the sports hall to record the entire context of the lesson. The mobile camera (GoPro Hero 7 with chest mount strap) was attached to the chest of the teacher-researcher and captured close-up student-student and student-teacher interactions. The conversations and micro-interactions taking place in the lesson would not have been possible to record without this feature. Students were largely dismissive of the camera during the lessons, and were mostly, more interested in being physically activity. It was only at the start and end of the lessons that students were more aware of the cameras, waving and dancing in front of them as they entered or left the sports hall.

Twelve lessons were video recorded, each lesson was 60 minutes in length. Four classes of 22 students were video recorded pre-COVID, with another four classes of 22 students video recorded twice each on subsequent occasions post/during COVID restrictions. That resulted in a total of 24 hours of video recorded data from 176 students. Table 4 provides further details of each video recorded lesson.

Table 4. Details Of Video Recorded Lessons.

Class	Lesson Date	Duration	Students	Activity	Focus
Class 1	2020.02.28	60 minutes 54 seconds	21	Rob the Nest (Team Game) Standing Long Jump (Skill Development)	Gather as many objects as possible. Jump as far as possible on a mat and measure distance.
	2020.09.18	60 minutes 31 seconds	18	All Things Hoops (Skill Development)	Four hoop games that can be played in PE or outside of school: 1) roll and catch, 2) throw object into hoop with a partner, 3) form a chain to take objects from one hoop to another, 4) jump through hoops and play rock paper scissors against another team.
	2020.12.04	58 minutes 30 seconds	22	King ball (Team Game)	Like dodgeball, throw and catch balls to eliminate opponents and save teammates who are in 'jail'.
Class 2	2020.03.03	59 minutes 48 seconds	22	Penalty Shoot Out (Skill Development)	Kick the ball from the spot into the goal, taking turns with teammates.
	2020.09.15	56 minutes 27 seconds	22	Create Your Own (Team Game)	Teams create their own tag games before demonstrating it to the rest of the class
	2020.09.22	59 minutes 46 seconds	20	All Things Hoops (Skill Development)	Four hoop games that can be played in PE or outside of school: 1) roll and catch, 2) throw object into hoop with a partner, 3) form a chain to take objects from one hoop to another, 4) jump

					through hoops and play rock paper scissors against another team.
Class 3	2020.02.26	58 minutes 39 seconds	22	Rob the Nest (Team Game) Standing Long Jump (Skill Development)	Gather as many objects as possible. Jump as far as possible on a mat and measure distance.
	2020.09.09	58 minutes 30 seconds	18	Playground Games (Health Related Fitness)	Rotate between six stations with small groups to creatively use different playground equipment
	2020.12.09	62 minutes 43 seconds	19	King ball (Team Game)	Like dodgeball, throw and catch balls to eliminate opponents and save teammates who are in 'jail'.
Class 4	2020.02.24	61 minutes 58 seconds	20	Rob the Nest (Team Game)	Gather as many objects as possible.
	2020.09.28	59 minutes 41 seconds	22	ABC (agility, balance, coordination) Fitness (Health Related Fitness)	Work with partner to complete six HRF activities.
	2020.11.30	59 minutes 54 seconds	18	King ball (Team Game)	Like dodgeball, throw and catch balls to eliminate opponents and save teammates who are in 'jail'.

Stimulated Recall Interviews (SRIs)

SRIs are a type of interview technique to gather data about the thoughts and experiences of participants using elicitation (Aarskog et al., 2018). The purpose of elicitation is to provoke dialogue and discussion among participants (Smith and Sparkes, 2017). In order to gain a deeper understanding of the affective domain, and in line with previous research (Aarskog et al., 2018; Quennerstedt et al., 2014), this study sought to use elicitation through SRIs to understand students' actions and perceptions. Students could expand on their responses or point out important moments in the lesson that may have seemed meaningless to the teacher-researcher. Quennerstedt et al. (2014) highlighted how SRIs provided unique interpretations of video recordings between participants. Aarskog and colleagues (2018) suggested that "by showing audio-visual clips of students acting in different situations, and subsequently asking them to explain what they were thinking in the same situations, we can produce empirical material about student thinking related to specific situations" (2018; 7). It is also important to note that interviewing young children has potential limitations, particularly in relation to memory (Krähenbühl and Blades, 2006). The use of video clips in an SRI approach can therefore provide an opportunity to 'jog' the memory of students (Aarskog et al., 2018; Dempsey, 2010). In turn, through using SRI's I felt it would be possible to get closer to understanding affective learning in Early Years PE and addressing the aims of this study.

Video recordings of each lesson during Phase 1 were observed approximately 6 hours (i.e., within the day) after the lesson occurred to maximise my recall of key moments

and events. Dempsey (2010) pointed out that SRIs may prompt student memory, but they are still reliant on individual student recall and interpretation, and therefore clips of video footage needed to be manageable for the participants. Key moments in the lesson, such as points of conflict, moments of friendliness, or the successful completion of a task, were edited and clipped to be used as part of the SRIs. These moments appeared meaningful to students, grounded in their actions during the lesson (e.g., emotional gestures or conversations).

Between two and four clips were created on the day of the video recorded lesson in preparation for the following day when students would be taking part in their SRI. The SRIs were small group (n=5) interviews of mixed gender students which took place in a familiar environment (i.e., an open common space outside of the students' classroom). This was selected to put students at ease, and to encourage students to expand upon or clarify understandings from lesson material. Clips of 2-6 minutes were shown to the group of students, with deliberate pauses in the clips to ask approximately five pre-determined questions. Although there was a range of 4-6 questions during SRIs, five was considered appropriate to maximise the scheduled time I was granted with students. Holding each child's attention during the SRIs was challenging, as reported in previous literature (e.g. Ennis and Chen, 2012).

Questions were generated by key moments observed in the lesson. If a moment of conflict was identified in the video footage, students were asked about the event and to clarify their perceptions and interpretations. Questions intended to be open-ended to allow for thoughts and feelings to be expanded upon and to ask to follow up

questions where necessary. Every student was directly asked at least one question to avoid a single student from dominating the discussion. Four SRIs were conducted in total, one for each class. The average time for the SRIs was 21 minutes 27 seconds with a range of 18 minutes 38 seconds to 23 minutes 22 seconds. A list of sample questions has been included in Appendix X.

Interviews

Interviews offered the chance to gather in-depth data on an individual or group of participants. Interviewing has been broadly defined as a social activity where two or more individuals engage in conversation at a certain time and place, sharing knowledge about themselves and the social world (Sparkes and Smith, 2013a; McGannon et al., 2019). Adopting a semi-structured approach to interviewing involves a set of pre-planned, open-ended questions to provide the interviewee with a relative topic of focus (Leavy, 2017). Interviews are a common method for gathering data in the discipline of sport science with a recent review of sport psychology journals finding 85% of studies adopted semi-structured interviews in their methods (McGannon et al., 2019). Moreover, semi-structured interviews and questions in group interviews have been used in various studies gathering data from young people (e.g. Goodyear et al., 2021; Jachyra, 2016; Mong and Standal, 2022; Wallhead and Dyson, 2017). Group interviews have also been used to gain further insight on the affective domain in PE (Lamb et al., 2021). Thus, interviews in this study would help address what the barriers and facilitators of affective learning (RQ3) are from a teacher and student perspectives.

Focus group interviews are similar to other types of interviews except they take place with multiple participants at the same time (Smith and Sparkes, 2017). In agreement with Koh et al. (2016), focus group interviews were deemed suitable with students because young children usually feel more comfortable surrounded by their peers rather than being in one-on-one interactions with adults. Furthermore, implementing focus group interviews offered a certain amount of flexibility, allowing for elaboration and exploration from both the interviewer and interviewees (Ennis and Chen, 2012), which is particularly useful when interviewing young children. A semi-structured approach meant the interviews remained relatively focused on topics that were relevant to addressing the study's research questions.

The focus group interview procedures in this study used established techniques. The interview format followed a series of questions (sample provided in Appendix X) and were recorded using a Dictaphone (Digital Voice Recorder – No Brand). Questions included what impact COVID had on student learning, how and what was meaningful for students PE experiences during lockdown, and what were students predicting and hoping for in future PE lessons. The questions were piloted in two group interviews in May 2020 (average time 14 minutes 16 seconds). Group 1 comprised of two females and three males. Group 2 comprised three females and three males. All students were 6-7 years old and came from a variety of countries including the UK, Australia, China, India, and Japan.

Modifications to the questions in the interviews were made because of these trials, specifically questions on the topic of feelings and experiences that needed to be directed at students. It has been found in other studies (e.g. Koh et al., 2016) that concrete efforts are required by the interviewer to encourage each participant to contribute in the focus group. There were instances when the conversations were dominated by individual students, therefore effort was needed to avoid this during subsequent interviews. Eight focus group interviews took place in June 2020. Groups of two and three students were interviewed in a familiar, common area outside of their classroom. The five students who took part in the focus group interviews were the same students who took part in the SRIs. All students were encouraged to participate and respond. The average time for each interview was 21 minutes 46 seconds.

To better understand the barriers and facilitators of affective learning in PE (RQ3), interviews with teachers were necessary to understand the meaning behind the actions, interactions and decisions they took in practice (Merriam and Tisdell, 2015a). Interviewing allowed for a deeper insight into teacher experiences and perceptions of the affective domain, and how affective learning is facilitated in PE. Questions included the overall purpose of PE, how and what students may learn in their PE lessons, what the affective domain in PE is, and what impact COVID had on teaching practice and student learning (see Appendices 1 and 2).

Interviews with teachers were recorded using a Dictaphone (Digital Voice Recorder – No Brand). Participants were not asked to disclose information they were not comfortable with. However, questions were related to emotions, feelings, and

experiences, which meant intermittently divulging potentially sensitive information during the interview. Questions were trialled with two postgraduate researchers. Both postgraduate researchers were teachers in a UK state school and an international school located in Sweden. Minor modifications were made to ensure the affective domain remained the focus. For teachers, interviews were conducted individually in a quiet space (e.g., classroom or meeting room) to avoid distraction or interruption. The average time for each teacher interview was 29 minutes 48 seconds. No participants were provided with questions used in the interview ahead of the interview. This was to be consistent and to avoid pre-determined responses being formed that may encourage social desirability bias. All interviews with teachers were completed in June 2020.

Data Analysis – Practical Epistemological Analysis

Introduction

In this section, I will discuss the analytical process undertaken to interpret the data gathered from video recordings and SRIs. I firstly discuss and justify the decision to use Practical Epistemological Analysis (PEA). Following this, I explain the steps undertaken to analyse the data including familiarisation of the data and data interrogation and extraction.

Practical Epistemological Analysis

Previous literature on the affective domain has predominantly provided evidence from self-reported data, such as student questionnaires of emotional constructs (Teraoka et al., 2020). While this data provides useful insights into the affective domain, to advance knowledge and to answer the research questions in this study, an alternative analytical tool was required to understand affective learning in context and in action. Drawing on Dewey's transactional perspective (Dewey and Bentley, 1949) – a founding theoretical framing of this thesis (see Chapter 2) – and Wittgenstein's perspective on language (Östman and Öhman, 2022), PEA has been stated in a growing body of literature as a robust methodological and analytical tool for understanding learning and meaning making in context and in action (Andersson and Risberg, 2020; Lundvall and Maivorsdotter, 2021; Östman and Öhman, 2022; Shilling, 2018). Furthermore, PEA is an appropriate method of analysis in the context of PE and to study the affective domain because it has been used in research within the context of physical activity and PE related to the affective domain (see Andersson et al., 2018; Andersson and Risberg, 2020; Barker and Quennerstedt, 2017; Maivorsdotter and Quennerstedt, 2019).

First put forward by Wickman and Östman (2002a, 2002b), PEA has been used to analyse applied learning and knowledge, a practical epistemology (e.g. Lidar et al., 2006), body pedagogies (Shilling, 2018), and modes of meaning making that are practical (Andersson and Östman, 2015; Klaar and Öhman, 2012; Östman and Öhman, 2022), aesthetical (Lundvall and Maivorsdotter, 2021; Maivorsdotter and Quennerstedt, 2012), artistic (Andersson et al., 2018; Andersson and Risberg, 2020), ethical (Sund

and Öhman, 2014), political (Van Poeck and Östman, 2018), and health-related (Goodyear et al., 2021; Goodyear and Quennerstedt, 2020). Notably, PEA can be used to analyse different types of data on learning: such as, observations, texts, drawings and interviews (Goodyear and Quennerstedt, 2020). Overall, PEA can be summarised as an elaborated tool to empirically answer three paradigmatic questions about learning: 1) how learning is connected to continuity and change, 2) what constitutes learning, and, 3) what influences learning (Andersson et al., 2018). In turn, the application of PEA in this study was considered an appropriate analytical method for understanding observation and interview data that presented multifaceted and nuanced interpretations of learning related to the affective domain.

Familiarisation of the Data

Prior to utilising PEA, a familiarisation process took place. In line with Barker and Quennerstedt's (2017) approaches to analysing video recorded data, familiarisation of the video recordings offered an opportunity to identify potential components of the affective domain. This first step in the analytical process, also draws on other qualitative literature that has used PEA (e.g. Maivorsdotter and Quennerstedt, 2019), and is a common approach in other qualitative research (e.g. Thematic Analysis; Braun and Clarke, 2021).

The benefits of video recording lessons included observing multiple transactions taking place simultaneously (ref). In addition, videos were re-viewed to check for learning and

meaning (Aarskog et al., 2018). As part of the familiarisation phase, video recordings were viewed six hours after the lesson to clip and edit in preparation for SRIs the following day, and then videos were re-viewed once all data had been collected, to identify situations related to the affective domain. The fixed camera video recording was observed first to gain an understanding of the whole context, such as the purpose of the lesson, and the affective learning goals for different activities. Following this, the mobile video recording was viewed to provide a deeper audio-visual understanding of the lesson.

This familiarisation process highlighted that components of the affective domain were observable through various transactions. The fixed and mobile camera recordings captured similar actions, such as emotional expressions and gestures, while providing different perspectives, such as subtle conversations on rule interpretation and changes (mobile camera) and the impact of including or excluding individuals from the class or sub-groups (fixed camera). I also found that multiple affective components occurred concurrently, reinforcing the decision to exclude statistical data (as found in my pilot study) from the study to fully grasp the complexity and interconnectedness of affective components using the PEA technique.

In the next step of the familiarisation process, I analysed the SRIs. SRIs were transcribed verbatim and read through while listening to the audio files for the purpose of immersion in the data and to check the accuracy of transcription. Key moments in the video clips were aligned with text in the SRIs to then interpret student experiences and meaning making of affective learning situations. The SRIs provided multiple

perspectives on affective learning from the students. There were agreements and disagreements between participants in the interpretation of key moments shown in the clipped videos. For example, the relationship between *winning* and *joy* was debated by students. Some students expressed how it was necessary to win at all costs to experience *joy*, while others felt that following the rules of the activity and *winning* fairly was a significant factor in achieving *joy*. Conceptually, the students varied in their interpretation of what constitutes 'happiness' in a PE context with a myriad of intrinsic and extrinsic factors. The clips were used only for the purpose of the SRIs; PEA was later applied to the whole data set of videos and SRIs. This step was vital in the process of familiarisation, as it provided understanding on student views of the data.

Throughout the process of familiarisation, notes and analytical memos were created. A number of well-established data analysis techniques in qualitative research (e.g. Grounded Theory and Thematic Analysis) adopt a note-taking approach to identify patterns and relationships in the data (Charmaz, 2014; Braun and Clarke, 2021). Notes in this context were written during and after viewing each video recorded lesson and after reading each SRI. The aim was to provide a written summary to help identify key moments within a specific lesson or interview that related to the affective domain. In Thematic Analysis, notes are taken after the researcher is familiar with the data (Kiger and Varpio, 2020). I took this step to note events of interest, connections between data, and to record questions about the data. Analytical memos were produced at the end of the familiarisation phase. Memos were used to begin connecting key moments from across the gathered data (i.e. video recordings and SRIs; Sargent and Casey, 2020).

The notes and analytical memos were used to critically inform the interpretation of video and interview data rather than as an independent source of data.

As a result of the familiarisation process, I was able to identify two significant areas that frequently caused participants to act in unpredictable ways during their PE lessons. Firstly, a range of emotions and feelings were expressed by students throughout the video recorded lessons, and were reinforced during the SRIs, such as their reaction to the outcome of an activity or their feelings towards teammates. Secondly, conflict between students during lessons occurred regularly and was largely dependent on student self-interests, loyalties, and priorities. Identifying these broad areas allowed me to time stamp specific events or key moments in the videos, which were returned to in the next step of applying PEA. Key moments were considered meaningful events worthy of further analysis if they were perceived as playing an important role in the lesson in relation to the affective domain. Comparable to didactic moments (Quennerstedt et al., 2014) and critical didactic incidents (Amade-Escot, 2005), key moments were potentially significant to student affective learning, such as if a student excluded another from taking part in the activity due to their perceived ability.

Data Interrogation and Extraction

In the data interrogation and extraction phase of data analysis, PEA was used to analyse affective learning and meaning making using video data and SRIs. In line with previous research (Andersson et al., 2018; Goodyear et al., 2021; Goodyear and

Quennerstedt, 2020; Östman and Öhman, 2022), five PEA concepts (see Table 5) informed the data analysis: *purpose*, *gaps*, *stand fast*, *relations*, and *encounters*.

Table 5. PEA Concepts (informed by: Andersson et al., 2018; Goodyear and Quennerstedt, 2020; Östman and Öhman, 2022; Shilling, 2018).

PEA Concept	**Description of Concept**
Purpose	Identify actions that show what are the purposes of the individual's participation. This step includes identifying the purpose of the activity, the purpose may be obvious through verbal exchanges, or ends-in-view.
Gaps	Identify explicit gaps in knowledge, interactions, behaviour and/or feelings. Gaps may persistently occur throughout certain encounters and can be experienced before awareness of a problematic situation exists.
Stand fast	Identify where students agree upon an experience, outcome, correction without taking it up as a reflective object in inquiry. It is when students act by habit, or what they do not question.
Relations	Identify which relations (or connections) are created to fill the gap(s). This step includes distinguishing and structuring relations that lead towards or away from fulfilment of the purpose. What an individual does to bridge the gap can create a connection between what is currently understood and the intended purpose and how these are valued.
Encounters	Identify individual's encounters when transacting. This step includes distinguishing and structuring encounters that lead towards or away from fulfilment of the purpose. Encounters could involve oneself, other individuals (i.e., peers, teachers), and/or the physical world.

I developed analytical questions (see Table 6) grounded in the PEA concepts. The approach to create questions were influenced by recent literature that has used PEA in educational (e.g. Thoren et al., 2021) and health (e.g. Goodyear and Quennerstedt, 2020) contexts with young people. Indeed, Maivorsdotter and Andersson (2020) used analytical questions to group and sub-group data.

Once drafted, the definitions of the concepts and subsequent analytical questions were discussed and reflected on with a critical friend. The use of a critical friend has been endorsed as a method for enhancing quality in qualitative research by challenging the construction of knowledge (Smith and McGannon, 2018). As an experienced scholar in the methodological and analytical implementation of PEA, the critical friend provided alternative interpretations and suggestions. One suggestion to come from the critical friend discussion was to consider how PEA and the analytical questions informed the analytical process with the explicit intention of addressing the research questions of the study. For example, the initial questions were too broad and needed to include and reflect the research focus on affective learning. In discussion with the critical friend, a redesign of the analytical questions occurred to better guide data analysis using PEA and to elicit nuanced aspects of the data that were relevant to the research questions. This would be significant when examining *gaps* that occurred in affective learning.

Table 6. Analytical Questions.

PEA Concept	**Analytical Questions**
Purpose	What is the purpose of the student's individual participation in the activity, and how does / doesn't this relate to the affective domain?
Gaps	What gaps exist?
Stand fast	What is obvious or taken-for-granted for students during interactions?
Relations	What do students do, use, or draw upon to 'fill' the gaps?
Encounters	What interactions do students engage with to resolve indeterminate situations?

Key moments identified from the familiarisation process were then examined using the analytical questions. In line with Andersson and colleagues (2018), *gaps* referred to moments of uncertainty and ambiguity that arose when individuals encountered a

problem or a challenge that they did not know how to immediately solve or explain based on their existing knowledge and understanding. In the video data, gaps were obvious where students hesitated in a decision-making situation, questioned an interpretation of the rules, or disagreed with another. Drawing on Östman and Öhman (2022), these *gaps* in understanding were recorded if they involved *encounters* with peers (interpersonal), a teacher (institutional), the environment (physical world), or self (individual). The type of gaps that were identified in the data did not have a predetermined, homogenous end point, but developed in different directions and at different trajectories and were regarded as not immediately being filled by participants but lingered. A summary of each lesson's *gaps*, *encounters* and *relations* associated with the affective domain were recorded in table format to identify connections between lessons and/or classes. Any *gaps*, *encounters* or *relations* that were similar across the data set were highlighted in the table and subsequently grouped if connections were identified. For example, 'hiding objects from others' and 'not taking turns' were grouped together as both involved breaking rules in a given activity. These *gaps* occurred across lessons and classes, leaving students in a position where they did not know how to act, and are, what Dewey would refer to as, indeterminate situations (Shilling, 2018).

For Dewey, indeterminate situations are a provocation for intelligent action (Hammond, 2013). Therefore, PEA is a tool for identifying and understanding how individuals make sense of indeterminate situations (Andersson et al., 2018; Östman and Öhman, 2022). Indeterminate situations were conceptualised as broader, more complex, and uncertain situations with no pre-determined answer (Quennerstedt, 2018). By using

the analytical questions in Table 6, indeterminate situations resulted from embodied actions that participants had not made sense of yet (Garrison, 2010; Quennerstedt, 2019; Shilling, 2018). The indeterminate situations were determined using PEA and occurred when observed *gaps* lingered or were open-ended. Specifically, three key indeterminate situations were identified: 1) *Rules*, 2) *Task* and 3) *Relationship*. Similar to Thematic Analysis, sub-groups were identified to provide more detailed accounts of the large grouped data (Kiger and Varpio, 2020). Additional sub-groups for each indeterminate situation were created by narrowing the focus on selective moments in the observations and SRIs that were significant to affective learning. For example, *Rules* was divided into *ethical actions*, *fairness*, and *rule changes*. The *task* and relationship perspective of participants were sub-grouped into *task priority*, *sense of connection*, and *conflict resolution*. Out of the twelve video recorded lessons, there were six key moments that related to *rules* and ten key moments involved *task* and/or *relationship* learning situations. In line with recent literature utilising the PEA method (Andersson and Risberg, 2020; Goodyear et al., 2021; Mattsson and Larsson, 2021; Thoren et al., 2021), transcribed illustrations will be used to present the findings from the video recordings and SRIs, attempting to capture observable components and pedagogical processes of the affective domain (RQ1, RQ2).

Practical Epistemological Analysis Conclusion

I have discussed the analytical process undertaken to interpret the data gathered from video recordings and SRIs. I rationalised the decision to use PEA as tool to gain

significant and original insights into the data. Further explanation of the steps I took to analyse the data (i.e., familiarisation, data interrogation, and data extraction) were shared. By employing the PEA method and analytical questions, three indeterminate situations were identified in relation to observing components of the affective domain and understanding the pedagogical processes involved in affective learning. The two indeterminate situations were *rules*, *tasks, and relationships*, which were broken down into sub-groups.

Data Analysis – Thematic Analysis

Introduction

I will outline the analytical process undertaken to interpret the data gathered from student focus group interviews and teacher one-to-one interviews. The first section involves rationalising thematic analysis (TA) in this study. Following this, I explain the recursive six step process suggested by Braun and Clarke (2019) that I used to analyse the data. This included familiarisation of the data, generating codes and then themes, reviewing themes, defining, and naming themes, and finally writing and reporting on the analysis.

Thematic Analysis

TA is a method used to identify, analyse, and report patterns or themes within qualitative data (Braun and Clarke, 2021). It is applicable and adaptable in a variety of paradigmatic and epistemological standpoints (Sparkes and Smith, 2014; Terry, et al., 2017). In interpretivist paradigms (e.g. social constructivism), thematic analysis can emphasize the social, cultural, and structural contexts that influence individual experiences, enabling the development of knowledge that is constructed through interactions between the researcher and the research participants, revealing the meanings that are socially constructed (Braun and Clarke, 2022). This was pertinent to this study, as I sought to examine experiences, knowledge and meaning from an affective perspective in PE.

The data type and research questions (specifically RQ3; see Chapter 1) afforded itself to the use of TA in comparison to other related analytical methods. Drawing on Braun and Clarke (2021), Grounded Theory (GT), Qualitative Content Analysis (QCA), and Interpretative Phenomenological Analysis (IPA) could be applied in this study but were emitted for key reasons. QCA has often been framed as atheoretical (Braun and Clarke, 2021), although theory cannot be avoided TA offers a theoretically flexible approach (Braun and Clarke, 2020) to this research study. GT's focus on the 'lived experience' (Charmaz, 2014) through the development of theory, which is not part of the intended aims, objectives and research questions of this study (see Chapter 1). IPA is broadly concerned with understanding and interpreting how human beings experience and make sense of the world (van Manen and van Manen, 2021). The identification of

broader affective themes in addition to highlighting the unique interpretations of individuals and groups is a key feature of this study which aligns with TA rather than IPA. In summary, TA was selected over GT, QCA, and IPA for several reasons: 1) GT intended to analyse the 'lived experience' (Charmaz, 2014), which was not relevant to the RQ's of this paper, 2) as a researcher, I did not intend to develop a grounded theory from the data set, 3) the analytical focus is on identifying themes across the data set, rather than focusing on unique features of individual cases.

TA has been adopted in several different qualitative studies (Kiger and Varpio, 2020). Braun and Clarke's 2006 paper established a common TA framework that was a philosophically flexible method for analysing qualitative data (Braun and Clarke, 2006, 2022). It has predominantly been applied in counselling and psychology disciplines (Braun and Clarke, 2021), in addition to a growing number of sport pedagogy research studies (e.g. Braun et al., 2017; Goodyear et al., 2021; Smee and Valerio, 2023; Teraoka and Kirk, 2022; Trainor and Bundon, 2020). Like Smee and Valerio (2023), I employed TA in this study to organise data and pinpoint common themes related to the experiences and understanding of affective learning in PE.

TA has been shown as an appropriate analytical method for seeking to understand experiences, thoughts, and/or behaviours across a data set (Braun and Clarke, 2019; Kiger and Varpio, 2020). The experiences of students and teachers – collected through interviews – provided breadth and depth to the voices recorded. To understand the affective domain in PE, TA was considered the most appropriate to engage with contextual factors and to understand the meaning of participant responses. In RQ2, I

was interested in the pedagogical processes that impact on affective learning. RQ3 triggered interest in the context and its influence on the affective domain. Therefore, TA was considered suitable over other analytical methods due to its flexibility, particularly when providing for generational differences and experiences, a variant data set, and differences in the formats of interviews (i.e., focus group and individual).

Braun and Clarke (2019) encouraged researchers who adopt TA to be explicit with their assumptions (e.g., pragmatic social constructivism) and analytical choices (e.g., inductive approach). Deductive coding involves predetermined theory or codes where codes are developed before coding begins (Braun and Clarke, 2019b). In TA, an inductive orientation is a common approach to engage with and analyse qualitative data (Terry et al., 2017), and involves data or content guiding the analysis (Braun et al., 2017). My approach was data-driven rather than theory informed, which would enable the voice of the participants involved in the interview to come through in the analysis and subsequent findings. Although the themes from the data may not exactly replicate the questions asked during the interview and are not necessarily reflective of my beliefs and interests (Braun and Clarke, 2006; Kiger and Varpio, 2020), I intended for a broader analysis of the interview data set to understand the personal experience and comprehension of affective learning in the participants' context.

Data Interrogation and Extraction

Thematic analysis was applied to data collected from 19 interviews – eight student focus group interviews and 11 individual teacher interviews – to address RQ2 and RQ3 (see Chapter 1). All interview data was interrogated and extracted following Braun and Clarke's (2019) six step recursive TA process: 1) familiarisation, 2) generating codes, 3) generating themes, 4) reviewing themes, 5) defining and naming themes, 6) writing and reporting analysis.

Step 1 involved familiarising myself with the raw data. Guided by Kiger and Varpio's (2020) example, familiarisation of the data began at the point of organisation through transcription (verbatim), listening to audio files, and re-reading transcriptions to cross-check for accuracy. After the transcriptions and reading of the whole data set were completed, reflective notes and annotations were made on interview transcriptions via the 'Comments' section of Microsoft Word to consider potential meanings and patterns. Similar to Trainor and Bundon (2020), this helped me begin to make sense of the interview dialogue that took place. The notes and annotations were excerpts, phrases or words that 'grabbed' my attention (Braun et al., 2017), and were potentially meaningful when addressing RQ2 and RQ3 (Terry et al., 2017).

The 'Comments' were summarised and organised in a table format in three categories for teachers: Physical Education Staff, Class-based Staff, and Leadership Staff. Student interviews were organised into their four classes. Key points and initial reflections suggested that teachers judged competence or ability as a potential

indicator of student engagement in PE lessons. Additional statements referring to enjoyment and motivation were strongly associated with student engagement and subsequently affective learning. However, there was little expansion or further detail to support the claims. Students reported the influence of their parents on enjoyment and motivation to take part in PE, physical activity, and/or sport. Overall, there appeared to be a distinct lack of understanding of the affective domain among participants.

During Step 2, the overall process was to start with an inductive approach to engage with the data. Within an inductive framework I utilised latent and semantic codes. NVivo 12 software was used to code data, allowing me to tag and code data in a flexible way where codes could be edited, refined, and redesigned instantly. Cases and case classifications were organised with the auto-coding function on NVivo, arranged by speaker or class name. Case classification added another layer to organising the data that became useful for separating student and staff interviews as well as identifying if there were patterns or relationships between the data and the different profiles of each participant (e.g., gender, class, job role). Several techniques were followed during Step 2 to code data such as identifying word repetition, labelling key words in context, comparisons between interviews, considering what is not said, the use of metaphors and analogies, and any connectors between transcripts. These techniques were used to identify patterns in the data, for example ‘Parent involvement in promoting PE and Sport’ focused on *parent* as a key word that was repeatedly mentioned across teacher and student interviews.

Following Braun et al.'s (2017) suggestion, coding occurred in two rounds. The first round involved coding potential items of interest and connections between data items that were raised in Step 1. This wielded many codes that were expansive but lacked meaning and were often duplicated. Several reflections of the coding process were noted after the first round. For example, ‘Affective domain is about setting rules for activities’ lacked context and required revision to ‘Rules can impact the learning experience of students’. Student and teacher interviews were coded together under the same project in NVivo to organise and analyse related codes that would assist in identifying patterns in the data.

The total number of codes for student interviews (n=294) differed to teacher interviews (n=755). There were multiple reasons for this, including students providing briefer responses to questions, the type of interview questions differed, power imbalances, generational differences, in addition to the type of interview taking place (i.e., focus group and individual). Utilising a critical friend to enhance quality assurance in TA has been encouraged (Terry et al., 2017). A fellow postgraduate researcher with experience of using TA engaged in critical dialogue to challenge my analytical process and encourage reflexivity. One key reflection was how to best represent student voice in the analysis. This was achieved by organising cases to separate student interviews from teacher interviews when necessary.

Grouping of codes was problematic and challenging. For example, ‘learning in PE’ may include face-to-face learning and/or online learning. Similarly, domains of learning needed to be separated despite there being areas that overlapped and made them

less distinguishable. There were also juxtaposed responses that made coding difficult; for example, ‘sport is valued when playing socially with friends’ and ‘sport benefits those who are able to perform’. A final reflection in Step 2 was how my position and role influenced what interested me in the data (i.e. teacher, researcher, colleague; Trainor and Bundon, 2020), including the school culture and whether participants were conscious of being open enough to legitimately share personal beliefs and experiences.

During the second round of coding, the aim was to reduce the number of codes by refining or revising where appropriate. Latent analytical coding was required to draw out deeper meaning and assumptions alongside semantic coding. Due to the age (6-7 years) of the students, they had fewer experiences to recall and reference when providing examples. In this sense, latent coding supported the development of conceptual meaning and understanding in the data (Braun and Clarke, 2021). However, semantic coding ensured codes remained close to the literal data meaning (Kiger and Varpio, 2020). This was particularly useful if a participant’s first language was not English. Braun and Clarke (2019a) highlight the flexibility of TA in that latent *and* semantic coding can be adopted in one research study. Latent and semantic coding aligns with my assumptions in this study that seeks to analyse data through a pragmatic social constructivist lens to gain a practical understanding of participant experience and knowledge of affective learning in PE. An example of latent and semantic coding in this study is provided in Table 7.

Table 7. Example of Latent and Semantic Coding.

Semantic	"…maybe they can do an emotional wellbeing check-in before they do a particular activity and after the activity then the reflective process comes in, okay. So, "How do you feel right now?" Or, you know, that sort of thing. I think the reflective approach would be a way to go."	Emotion check-in to stimulate reflective process.
Latent	"…if I'm going to be honest, sometimes with the teaching, you just don't have that time with it [affective learning], especially with the various sports that we teach."	Addressing the affective domain is visible.

Step 3, the active process of generating initial themes involved identifying a mode for clustering codes together around a larger concept they all share (Braun et al., 2017). Although coding and theme development are assumed to be subjective and interpretative (Terry, et al, 2017), I was concerned about generating conceptual and abstract themes from the codes that accurately represented the data. This type of worry appears to be common for a researcher, as are apprehensions about the coding process ceasing to end (see Trainor and Bundon, 2020). I began creating themes by combining and comparing codes. After initially attempting to move into Step 4, a first review of the themes made it clear that additional analysis and mapping were required to address RQ2 and RQ3. Grappling with the themes had been problematic, trying to ensure themes are conceptual or abstract rather than mere descriptors. In response, I reviewed each initial theme and, guided by Braun et al. (2017), sought to re-write the five initial themes to highlight the positive and negative codes that lay within them. The themes were re-structured, narrowed or combined to make three broader themes. These overarching themes had several sub-themes sitting within each, key points were noted to highlight distinctions between themes, and examples from the data were written to reinforce their inclusion or exclusion from the analysis.

In Step 4, I attempted to clarify and refine the themes to generate a deeper and richer analytical narrative of the data for representation purposes. Coded data extracts and examples provided short illustrations of the themes for the purpose of refinement and modification. My intention was to sufficiently represent the whole data set and demonstrate quality examination and analysis (Kiger and Varpio, 2020). Reflections encouraged the re-grouping of codes and generating themes to redefine or realign their meaning. For example, I cross-checked if themes worked in relation to the codes and generated mind maps of the analysis to address the key areas identified by the research questions. In the second review, I used the mind maps (example in Figure 1) and referred to Step 1, the familiarisation summaries, to gauge if the analysis was representative of the data. It was at this point that I found the visualisation options in NVivo were beneficial when mapping, creating, and refining themes. This supported the creation of Table 8, which provides a representation of how codes and (sub-) themes were aligned with supporting extracts from the data.

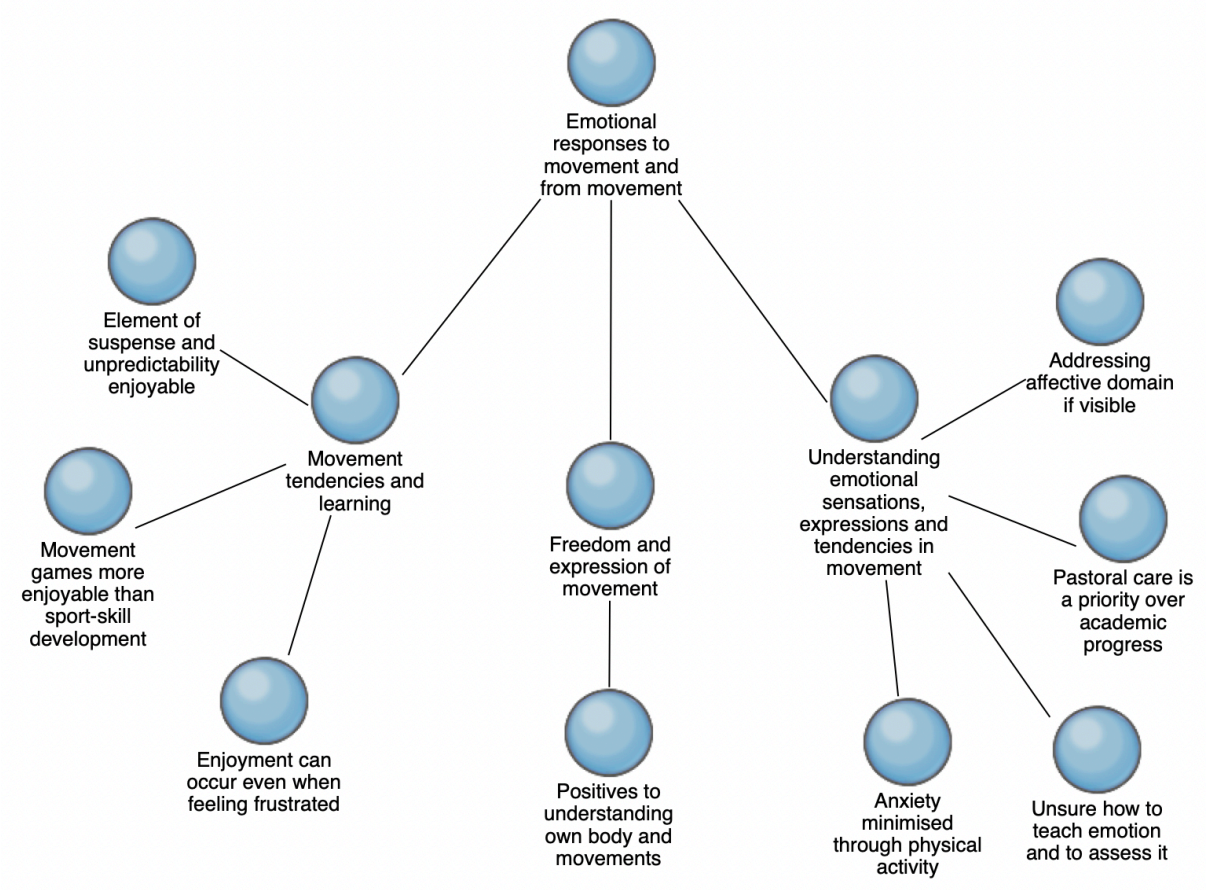

Figure 1. An Example Mind Map of 'Emotional responses to movement and from movement'.

Step 5 in the TA process included defining and naming themes. A description of each theme was written to create a narrative of how and why the theme provided insight into addressing RQ2 and RQ3. Three themes were eventually established as representative of the data and appropriately addressed RQ2 and RQ3: 1) emotional responses to movement and from movement, 2) relationships influence pedagogical processes, and 3) teaching and learning affectively in a broader socio-cultural context. Table 8 provides further details of the themes and sub-themes.

Step 6, has been reported as a continuation of Step 5 (Kiger and Varpio, 2020). Elements of the writing began with the notes and sequencing of analysis which followed the recursive TA process from familiarisation to defining and naming themes. The importance and selection of the themes related to the research questions (RQ2 and RQ3) will be shared in addition to data extracts that contain meaning and context.

Table 8. Step 4. Reviewing Themes in Thematic Analysis.

Theme	Emotional responses to movement and from movement.	Relationships influence pedagogical processes.	Teaching and learning affectively in PE in a broader socio-cultural context.
Sub-themes	1.Affective affordances 2.Bodily tendencies 3.Transaction (individual and environment)	1.Nuanced, in context relationships 2.Relationships in the broader educational context 3.Structural and institutional influences	1.The purpose of PE 2.Teaching affectively 3.Learning affectively
Key Points	Sensations, postures, expressive movement, and movement tendencies. Reaction to / from things (i.e., activity type, peers, teacher) that are important.	Interactions and relationships / social fields. Interaction and connection between teachers, peers, parents, school culture and geographical setting, and nature and purpose of relationships.	Practice architectures? Cultural capital / field? PE curriculum design and outcomes. Sport, physical activity and/or health. Judgement and perceived ability (performance verse learning). Limitations on resources and priorities from stakeholders. Gender stereotypes.
Examples from Data	Just getting the endorphins flowing. You know, you have an hour where you move your body, and you feel good about yourself. And I think this is a really good way to keep you know, there is an old adage that is healthy body, healthy mind. -James	Ana: I remember Rob the Nest is pretty fast because there's not much time to fetch something, and the others are trying to stay in one line. Somebody will have more than one turn and others will argue that they have had more than one turn. My job to keep them in a line. I also did other stuff too.	A big thing that they're lacking, which again, going back to the first question is a big thing of the PE that they learn social skills. They learn winning, losing. They learn teamwork. They learn. I mean, there's a big list you could go about, isn't there. Transfer

	Kai: I find games fun. Zoe: Yeah, all the running games. Kai: Its fun doing the forwards roll in gymnastics. -Class 4, Interview 2 Adam: There's things I didn't like about King Ball. Like you throw the ball, and the player misses the ball, it's very frustrating. Because you're trying to get them out. If you're the only person you have to get them out safely. T-R: So, you found that frustrating? But did that, would that stop you from playing the game? Adam: No. T-R: You would still want to play the game? Adam: Yeah, it was [just] difficult. -Class 1, Interview 2	-Class 1, Interview 1 The lower year group's a lot about fundamental skills as well as sort the pink and fluffy stuff as well, about their social skills, their interaction, their communication, their leadership. -Lucy It's wholly where a school wants to go and where the leadership says, "This is what we want to do." I worked at different schools and very inclusive sport, broad curriculum or very competitive, but we've got a very competitive element, where we're ensuring in our timetable there's sport for all and access to all types of activities. -Oliver	from PE to every subject outside of school. -Grace Actually, technically they [young people] can pick up things pretty quickly and I think that emphasis on the teamwork in team sport is something that I think has been lost a little bit over the years, too as people have become a little bit more individualistic, idealistic, individualised. You know, in society, in general and I think you don't hear people talking about the team aspect as much as what you used to. -Ben T-R: What does it mean to be gracious? Like if you lost the game. Chloe: You're not like 'argh, I lost the game, I don't want to play again.' You're like 'oh, good job.' But you can do that [high five]. -Class 4, Interview 2

Thematic Analysis Conclusion

I have outlined the analytical process to interpret the collected data from student and teacher interviews. I explained the decision to adopted TA as an established method to gain insight into student and teacher experiences of the affective domain in PE. The six-step process outlined by Braun and Clarke (2019) was expanded upon to identify what I did in each step and how the analytical process evolved. By employing the TA steps, three overarching themes were generated: 1) emotional responses to movement and from movement, 2) relationships influence pedagogical processes, and 3) teaching and learning affectively in a broader socio-cultural context. However, at this point (step 6; Braun et al., 2017) I encountered challenges when synthesising and integrating the data with existing literature using Thematic Analysis. I made the decision to draw on the theory of *practice architectures* to conceptualise these findings instead to explain the findings more coherently.

Practice Architectures

The term *practice architectures* is a theoretical lens that refers to the understanding of practice, where practice is considered situated and relational (Fabri and Jobér, 2023). The concept of *practice architectures* builds on Schatzki's notions of site ontologies. Schatzki (2017) used the term site ontologies to explain that learning and knowledge are socially constructed practices. *Practice architectures* takes the idea of site

ontologies further by conceptualising practice as something that already or always exists within education (Kemmis and Smith, 2008; Smith et al., 2010). Furthermore, *practice architectures* consider the social and structural aspects of education that impact on teaching practice and student learning (Goodyear et al., 2016). As practice is continuously shaped and reshaped by the interplay between an individual and their environment (e.g. school, teacher and student), *practice architectures* can evolve or emerge (Fabri and Jobér, 2023).

In taking this analysis of *practice architectures* further, Schatzki's perspective of learning is rooted in the concept of social practice and knowledge acquisition (i.e. knowing how, knowing that, and acquaintance; Kemmis, 2021; Schatzki, 2017). According to Kemmis (2021), Schatzki conceived practice theory and the acquisition of knowledge as a way of understanding learning. However, it was argued by Kemmis that Schatzki did not consider the process of learning, or the view of learning in practice (Kemmis and Smith, 2008; Kemmis et al., 2014; Kemmis, 2021). Although situated and social learning theory (e.g., Situated Learning theory, Lave and Wenger, 1991) were influential in Kemmis' interpretation of *practice architectures*, it was theorised as a way of conceptualising the prefigured practices that exist in educational settings (Kemmis, 2010). For Kemmis, the significance of social practice in learning is a core component of *practice architectures* where interaction between the individual and the environment is expressed in distinctive ways (e.g. conversation, movement, compassion) and through specific practices (e.g. direct instruction, peer-to-peer feedback, cooperative learning) that are shaped by the historical and cultural conditions, spaces, and/or time in which they exist (Fabri and Jobér, 2023; Phelan and Griffiths, 2019).

Recent literature has drawn on *practice architectures* conceptually in PE and sport contexts to develop new understandings of current practice and to identify areas that support and/or restrict practice (see Casey and Kirk, 2020; Fabri and Jobér, 2023; Goodyear and Bundon, 2021; Goodyear et al., 2016; Phelan and Griffiths, 2019). For example, Fabri and Jobér (2023) used *practice architectures* as a lens to examine the facilitators and constraints of health information practices in Sweden. The studies delved into what Kemmis (2021) described as the *intersubjective space*; where interplay occurs between individuals and their environment in three distinct arrangements: 1) cultural-discursive, 2) social-political, and 3) material-economic. Figure 2 highlights that although distinct, a key feature of *practice architectures* is that all three arrangements 'hang together' to create 'working conditions' that are interdependent (Fabri and Jobér, 2023; Goodyear and Bundon, 2021; Kemmis, 2021).

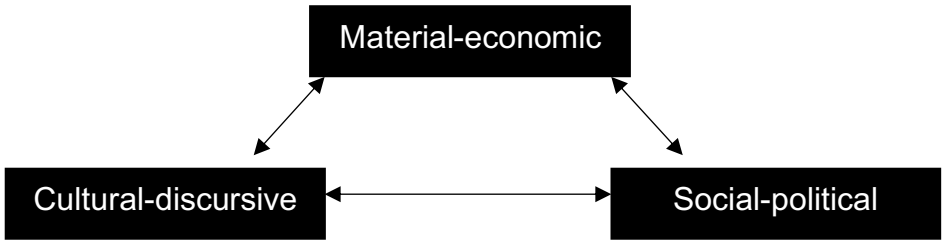

Figure 2. Interdependent Arrangement of Practice Architectures.

Goodyear et al. (2016) drew on similar findings in their paper to demonstrate how the three interdependent arrangements hang together. Specifically, the dominant cultural-discursive justification for a teacher-led approach to deliver a physical education-as-

sport approach that met expectations set by external organisations (i.e. Ofsted; social-political), using sport-specific resources (i.e. large sports hall; material-economic) hung together to create working conditions that constrained teachers use of new practices. In Chapter 2, barriers to changing practice in PE were identified. It is difficult for teachers to move beyond these constraints when one or more of the arrangements reinforce the others.

The cultural-discursive arrangement, or semantic space (Kemmis, 2021), can be understood through the beliefs, cultural norms and linguistics that occur in practice, and are often expressed through ways of talking in or about educational practice (e.g. language and discourses of sport). For example, Phelan and Griffiths (2019) identified how existing cultural ideologies informed the language of sport coaches and administrative staff within the organisation they represented, and that the dominant discourse determined coaches' intentionality towards collaboration.

The social-political arrangement, or social space (Kemmis, 2021), is how individuals relate to others through their encounters with social hierarchies, social structures and relationships within educational practice. For example, teachers create lesson plans and are observed fulfilling criteria set out by external organisations (i.e. Ofsted[3]; Goodyear et al., 2016). Timetables of lessons constrain practice whereby short lessons often involve a warm-up, skill, and game. In a multi-activity approach, short units (i.e. up to 6 lessons) means that there is limitation to the development of learning over time.

[3] In the UK, the government and schools assess teaching and learning quality through criteria set out by the Office for Standards in Education, Children's Services and Skills (Ofsted). Ofsted is a UK government organisation.

The material-economic, or physical space (Kemmis, 2021), refers to what teachers and students do with their access to equipment, and the educative function of space. For example, a large, open classroom in a primary school where students are configured in groups of five and six on desks and chairs facing a smart board (Kemmis et al., 2014). In a sport context, sports halls are often divided up with lines (e.g. basketball court markings), equipment is sport-specific and often limited to being used for that sport. It has been reported that it is easier for teachers to control and manage a warm-up, skill, and game approach by implementing teacher-led practices (Goodyear et al., 2016).

Rigour and Quality

Merriam and Grenier (2019) claimed there is no simple answer to determine quality in qualitative case study research. Ongoing debate continues around rigour and key terms such as validity, reliability and generalisability in qualitative research as a whole (see Smith and McGannon, 2018). Validity is a contested term in qualitative research because the complexity and richness of the data may not be captured (Sparkes and Smith, 2013b). Prominent case study scholars Stake (2005), Creswell (2009), Yin (2013) and Merriam and Grenier (2019) devised frameworks for assessing quality in qualitative case study research. However, like Tracy's (2010) influential eight markers for qualitative quality, the application of universal criteria has been problematic. The intention for qualitative research studies to enhance rigour by following a checklist

could result in the reduced value of qualitative methods and findings (Smith and McGannon, 2018). The selection of appropriate markers such as Crowe et al. (2011) arguing for the triangulation of methods and a transparent research process, or Hyett et al. (2014) endorsing the thick description of key methodological decision making, can enhance rigour in case study designs.

The methodological quality of this study is reflected in the alignment of the research questions (see p.3) with my ontological and epistemological stance (see p.62). The worthiness of the topic has been highlighted (see Chapter 1), specifically the affective domain is considered an essential area in PE policy and practice, but little qualitative research exists to support the development of Quality Physical Education in policy and practice (Dyson et al., 2018). I was explicit in the decision to adopt a purposeful (criterion and maximum variation) sampling technique to increase the range of participant voices and perspectives. A multi-method approach broadened and diversified the data set, providing opportunity to add student voice to the interpretation of video recorded data during SRIs, interviewing student's multiple times, and engaging several teachers with a range of backgrounds to contribute. I have continued to acknowledge my own role, assumptions, and experiences within the research process (e.g., the power relations between students and I during interviews). The dialogue and discussions with other researchers acting as critical friends have been highlighted. Finally, an audit trail of the methods and analytical process, the impact of COVID on data gathering and the subsequent decisions that were made to continue the study have been laid out (see Chapter 3). All of this demonstrates quality in the coherence, sincerity, credibility, and resonance of the research process undertaken.

Chapter Summary

In this chapter, I justified my methodology considerations through my pragmatic social constructivist stance and exploratory research focus. I argued for a case study research design to address the research questions of this study. I have grounded my argument by drawing on influential scholars such as Stake, Yin, and Merriam. The flexibility and exploratory nature of a Stakian design lent itself to the needs of this study. I described the international school and PE landscape in Singapore, and the 176 students and 11 teachers involved in the study. In addition, I discussed the methods of data collection, specifically video recorded observations, stimulated recall interviews, individual interviews, and focus group interviews. Finally, I outlined my perceptions of quality and rigour in this research study. The following chapters will explore the findings of each analytical method (PEA and Practice Architectures).

CHAPTER 4: CONCEPTUALISING THE AFFECTIVE DOMAIN

In order to address the study's research questions (RQ1 and RQ2; see p.3), this chapter focuses on 'zooming out' and 'zooming in' of the data. For example, zooming out refers to reporting the patterns and trends across the data set, and across all classes and groups (i.e. teachers and students) in the study. Zooming in involves exploring these patterns and trends in further detail to examine them in depth, from the perspectives of a few scenarios, and in the context of this study to allow a rich and nuanced picture of the context and affective learning in PE to be constructed (Larsson and Quennerstedt, 2016).

Guided by Dewey's transactional learning theory (Dewey and Bentley, 1949), the intention of 'zooming out' is to analyse action and interplay that is considered to represent overall affective learning situations across the data set (Larsson and Quennerstedt, 2016), and in this study, data generated from lessons. Indeed, Dewey and Bentley's (1949) transactional learning theory is about understanding learning as the reciprocal relationship, created in action, between the individual and their environment. The analysis of results in this chapter using PEA follows previous studies (e.g. Mattsson and Larsson, 2021) that have implemented a similar approach using Dewey's transactional learning theory. Similarly, the data is reported using a similar structure of zooming out and zooming in as previous studies, by providing a narrative

with illustrative quotes to ‘zoom out’ and then line by line analysis when zooming in (e.g. Lundvall and Maivorsdotter, 2021).

In the following section, I illustrate how ‘zooming out’ provides an overview of the range of affective indicators that were observed across the data set. As stated in the methods chapter, I used PEA to engage with the data and identify the affective indicators. Pedagogical processes (i.e. teaching and learning processes) in this study are considered embodied and contextual (Barker et al., 2017), and can be identified using the PEA technique (Östman and Öhman, 2022). The embodied and contextual nature of pedagogical processes can be better understood through the lens of how teaching and learning are influenced by various situational, physical and social factors. The PEA technique is an empirically informed method to identify and analyse these processes.

While the PEA method was useful, at the point of conceptualisation, I found it beneficial to combine what was observed using PEA with three aspects of the “transactional model of influence”: 1) interpersonal, 2) institutional, and 3) the physical world (Östman and Öhman, 2022; 13). The interpersonal influence is the interplay between a student and other individuals in their environment (e.g. teammates disagreeing about who’s turn it is to run). The institutional influence involves the type of instruction and pedagogical support (e.g. my role as the teacher-researcher). The physical world involves objects and other materials that can influence how a student acts (e.g. a ball or skipping rope). The interpersonal, institutional, and physical world influences were useful for conceptualising affective indicators as they occurred in the video recorded data.

Observing Affective Learning (Zooming Out)

In this study, learning was positioned as a change in behaviour where individual's attached new meaning to novel experiences as a result of transacting with their environment (Dewey and Bentley, 1949; Lundvall and Maivorsdotter, 2021; Östman and Öhman, 2022). The processing of information and value placed on certain experiences was constantly evolving (Sund and Öhman, 2023). Learning situations were educative moments where indicators of learning occurred. Affective learning concerns the emotional aspect(s) of the meaning making process (Rogers et al., 2017), while affective outcomes include concepts such as motivation, self-esteem, self-regulation, and self-efficacy (Dudley et al., 2022; Teraoka et al., 2020). The transactional learning theory which guides this chapter – drawn from Dewey's pragmatic philosophy (Dewey and Bentley, 1949) – has been applied in a range of similar empirical studies focusing on learning (e.g. Andersson and Östman, 2015; Andersson and Risberg, 2020; Klaar and Öhman, 2012; Maivorsdotter and Quennerstedt, 2019; Mattsson and Larsson, 2021; Quennerstedt et al., 2011; Sund and Öhman, 2023).

There were several indicators of the affective domain that were often observed to be influential during the PE lessons. For example, across video recorded lessons, students displayed a range of feelings such as *excitement*, *joy*, and *frustration*. Table 9 lists the affective indicators observed using PEA. Using PEA allowed me to recognise these indicators in context and the transactional understanding of the environment was

applied as a theoretical lens to examine and comprehend emotional aspects of the lesson (Lundvall and Maivorsdotter, 2021). There were moments where students experienced a range of intense feelings that were influenced by, or exerted influence on, other students (i.e. interpersonal), their environment (i.e. physical world), and the teacher-researcher (i.e. institutional). Subsequently the *purpose* of student learning was regularly disrupted as to what appeared important. What was of value in each situation was continuously shifting. In this sense, the interpersonal, institutional, and physical world influences acted as the creation, or creator, of affective learning in the video recorded PE lessons.

Table 9. Observed affective indicators when zooming in on different learning situations.

Learning Situation			
	Rules	*Tasks*	*Relationships*
Indicators of the Affective Domain	Delight Excitement Joy Disappointment Frustration Sadness Remorse Content Resolute Embarrassment Physical prowess Successful Competitive Encouraging Celebrating Retribution Elation Confidence Annoyance Despondence Discontentment Empathy Compassion	Disappointment Frustration Successful Judged Celebrating Elation Confidence Annoyance Dismissive Ambition Determination Self-awareness Irritation Perseverance Resolve Amusing	Excitement Frustration Disagreement Annoyance Loyalty Anger Trust Retribution Physical Prowess Supportive Engaged Agreed Discord

The overarching purpose of the PE lessons were individual and team skill development. Video recordings of the teacher-researcher's instructions and interventions support this intent. Yet students identified other purposes for their PE lessons during the stimulated recall interviews (SRIs), such as *competition* and demonstrating *physical prowess*.

> Student: When I normally play football at playtime, I don't score that much goals because there's a goalkeeper...
> Teacher-Researcher (T-R): How does that make you feel then if you're scoring goals in PE?
> Student: Happy! Because I managed to score the goal. I love the feeling of scoring goals!
>
> (Class 2, SRI, 2020.03.04)

The purpose for students to participate in PE was driven by the need to *feel success* or to be *viewed as successful*. For example, in video recorded lessons students who gained the most points declared their victory to reinforce the outcome, *celebrating* their own success and in turn pointing out how their opponents had lost (i.e. not succeeded). However, there were examples of others who were content to celebrate their success sensitively with individuals they trusted. These trusted individuals were often in the same team but occasionally came from opposing teams. In these moments there were displays of *empathy* and *compassion* which appeared to depart from traditional notions of success in PE (i.e. winning).

To *succeed*, students created opportunities that could highlight their success. These occurred through physical movement, an expressive feeling, or performing skills relevant to the activity. The impact of either tangible or perceived success on other students was recognisable through student interplay, reactions, and gestures. The

intensity of these reactions and/or gestures (e.g. waving arms forcefully in the air) were often affected by the actions of other students. For example, students who were overly assertive towards their peers, with the intention of improving performance, were often confronted with *discontent* and *frustration* from teammates. The *annoyance* felt and shown by students affected their levels of engagement in the lesson and their willingness to share or take onboard new ideas (e.g. performing a new skill).

In a few instances, *annoyance* led to sequences of learning that did elevate the perception of success and made indicators such as *determination* and *resilience* observable. The exclusion of an individual from their team *motivated* students to prove their worth. For example, in a video recorded lesson of Class 1, a student was exiled from their team during the first part of the lesson due to their inability to perform to the standard of other group members. The response of the student was to become a non-participant in the lesson. However, later in the same lesson, the non-participant was obliged to take part through teacher intervention and peer pressure. They jumped further than expected in a Standing Long Jump competition to gain enough points for the team to win overall. This led to a reconciliation of the group when the success was recognised by all members of the team. The overriding feeling of *joy* was observed at this point and that feeling was reiterated during the SRI.

> Student: I didn't want to do it, but I had to do it for my team.
> T-R: You had to do it for your team. So you felt that that was important for you to do? How do you think these guys felt by you doing that jump?
> Student: Good.
> T-R: They felt good? Did you guys feel good?
> All Students: Yeah.
>
> (Class 1, SRI, 2020.03.02)

Interpretation of the data generated findings that focused on observing learning in the affective domain within PE lessons. Insight from the PEA method and transactional perspective indicated a complex and complicated interplay between individuals and their environment. For example, there was a fragility in student decision making during significant moments of an activity or game (e.g. was a student hit by the ball or not). The teacher was often viewed as the decisive figure in a disagreement; an authority who could settle a dispute instantly. Conflict between students varied from silent (e.g. a *frustrated* facial expression) to overt (e.g. *aggressive* shouting and stomping of feet), often resulting from the impulsive purposes students held for themselves and others (e.g. *physical prowess*). In addition, conflict often occurred when activity was not taking place. The periods between teacher instruction and physical movement provided opportunities for teams or groups to come together and agree on collective strategies and tactics. Students who were perceived to have the most *physical prowess* by the teacher-researcher attempted to dominate these discussions. The response to these students by others was often unpredictable. Some were ignored, others were partially listened to. This usually created feelings of *irritation*, *anger*, or *disappointment*, leading to a division within teams.

The observation of affective indicators through the PEA revealed that students displayed three broad situations for affective learning: 1) *rules*, 2) *tasks*, 3) *relationships*. These three common learning situations relate to the range of feelings identified in the data by all participants (e.g. *frustration* and *physical prowess*) and the impact their aims for each PE lesson had on affective learning.

Rules: the rules of a given activity or game relate to the pre-determined codes of behaviour that should be followed by all individuals involved in the activity or game. The rules in the video recorded lessons were set by the teacher-researcher for students to follow. There were students who followed the rules as intended by the teacher-researcher, while others interpretated, manipulated, or ignored the rules for their own means. For example, students were not allowed to hide objects when stealing them in a game of 'Rob the Nest'. Some students intentionally hid objects to conceal them despite understanding that this was breaking a rule.

In several exchanges with students during the recall interviews, students would attempt to justify why they ignored the rules to gain an advantage within the activity or game. Several indicators of affect were observed and then discussed by students during the SRI such as *disappointment*, *sadness*, and *remorse*. The reactions from teammates and opponents reflected these feelings. The desire to win was often present in the data, impacting the decisions and subsequent reactions of students when interpreting rules. While some students expressed feelings of *sadness*, others remained *content* and *resolute* with the decision to break rules if they won.

> Student A: If I at least had two [points], and I did not sit on [a high value object] at the very end and two people would steal from us then that would be better.
> T-R: So if you were going to win the game, if you guys won it you would have felt happy [that you cheated]?
> Student A: Yeah.
> T-R: Compared to being sad because you lost the game. So would it have been worth covering up those [objects] if you'd won the game and you won the game because you would cover it all up…would you still have felt happy?
> All Students: Yeah.
> T-R: You would be?

Student B: Hmmm, but that's cheating.

(Class 1, SRI, 2020.03.02)

Rules were presented by the teacher-researcher in lessons in absolute terms. They were reinforced throughout, usually by the teacher-researcher but occasionally by other students. How students interpretated the rules varied according to their intentions or ambitions in the activity. High intensity games or activities (e.g. Rob the Nest) often resulted in students being more flexible in their approach to following the rules, resulting in affective indicators such as *frustration*, *annoyance*, and *retribution* being observed. This is compared to lower intensity activities (e.g. ABC Fitness) where students often adhered to the rules. The desire to *win* was regularly observed during high intensity activities in comparison to the lower intensity activities that either reduced or removed the level of competition between students.

The effect of lower intensity activities can be linked to the *task* and/or *relationship* perspective of students. It was observed that when students had more time to process the task (e.g. performing a skill) or build a relationship (e.g. share an idea) that they were able to regulate their feelings more effectively (e.g. *disappointed* to not catch the ball but *determined* to try again). Students displayed higher levels of *confidence* because of targeted feedback and encouragement from the teacher-researcher and peers.

The students' perception of what was valued within each game or activity were diverse. In addition to *rules*, students' tendency to act or move were affected by either the *task* or a *relationship* when taking part in the PE lesson. *Tasks* involved students being

focused on the activity or game at hand, specifically its objectives, often with the *ambition* of 'winning' or beating other opponents.

> T-R: For you guys, what were the aims of the game? What were you trying to do?
> Student A: Stealing...
> Student B: We were stealing from the main two Houses, Red and Purple. Mostly Purple and also Red.
> T-R: Were you gonna change your plan based on them stealing your treasure?
> Student: Stick with the plan.
>
> (Class 4, SRI, 2020.02.25)

Students were more likely to remain on task when others (i.e. peers or teacher-researcher) were involved in the activity. While this supported students intellectually, it impacted on how students felt (e.g. being *judged* or compared) about what and how they were learning.

The final common learning situation – *relationship*s – concerned students' interactions and connections with others over what was valued and meaningful. Students were presented with a paradox within video recorded lessons where games and activities were often competitive: to consider peers (i.e. classmates) in other teams as a friend or adversary.

> T-R: What about you guys? Because you guys aren't in [team] Blue. What were your thoughts about the game?
> Student: I'm just helping another team because my friend is in it.
> Student: I feel happy that I'm helping the team.
>
> (Class 2, SRI, 2020.03.04)

Through three common learning situations – *Rules*, *Tasks*, *Relationships* – it was possible to observe a range of indicators of the affective domain (see Table 9, p.129). Using PEA allowed me to identify affective indicators in the data. The use of PEA and how transactions between individuals and their environment (i.e. interpersonal, institutional, and physical world influences) made it possible to understand the impact on affective learning. It was necessary in the next step to 'zoom in' on specific learning situations related to *Rules*, *Tasks,* and *Relationships* to understand the complexity of affective learning in PE lessons in more detail.

Zooming In

Unlike 'zooming out', 'zooming in' on learning relates to the specific context of the practice (Larsson and Quennerstedt, 2016). A zoomed-in perspective of the data provides an opportunity to delve deeper into the observed learning processes (Goodyear et al., 2021), and in this study, to observe the affective domain in PE lessons. In this study, zooming in involved identifying specific affective learning situations, and analysing the detail of a specific situation, often no longer than a couple of minutes. Teaching and learning is a complex process, that involves students with diverse pedagogical needs (Goodyear and Armour, 2021). Across a single moment in time students are experiencing differences in learning content, intensity, and influences (i.e. interpersonal, institutional, and physical world) that are constantly changing. Zooming in allowed me to understand the complexity of learning, the variance within classes or

groups, and to recognise how these factors work together to influence affective learning.

Rules, *Tasks*, and *Relationships* were specific learning situations that were common across the 12 video recorded PE lessons, and when there were indicators of learning related to the affective domain. Observing affective learning was highly complex. First, learning was non-linear and challenging for the students, meaning that learning did not follow a linear route of students developing and scaffolding their prior learning – they often went backwards, before progressing. Second, perspectives of learning differed between the teacher-researcher and the students. The teacher-researcher's intended purpose(s) in lessons was not always shared by students who appeared to only think or behave in the 'present'. Furthermore, there were multiple forms of affective learning observed (see Table 9, p.129) across and between the learning situations (e.g. *confidence*, *excitement*, *frustration*).

The PEA concepts of *purpose*, *gaps*, *stand fast*, *encounters*, and *relations* (see Table 10, p.138) acted as guiding concepts that allowed me to unpack and explore the video recorded data, observing indicators of affective learning (see Table 9, p.129). When the illustrations were examined in detail using all five PEA concepts the *encounters* represented the interplay between the individual and the environment, and these could create or fulfil *gaps* (e.g. encouraging team mates to play fairly). *Relations* were constructed by individuals to bridge *gaps* and created connections between what was already understood and what was valued (e.g. recalling how a game was previously played and applying that knowledge in a new situation). A transactional perspective

means that the individual and environment are constantly evolving (Sund and Öhman, 2023), as are the influences (i.e. interpersonal, institutional, and physical world) in each learning situation.

Table 10. PEA Concepts (informed by: Andersson et al., 2018; Goodyear and Quennerstedt, 2020; Östman and Öhman, 2022; Shilling, 2018).

PEA Concept	**Description of Concept**
Purpose	Identify actions that show what are the purposes of the individual's participation. This step includes identifying the purpose of the activity, the purpose may be obvious through verbal exchanges.
Gaps	Identify explicit gaps in knowledge, interactions, behaviour and/or feelings. Gaps may persistently occur throughout certain encounters and can be experienced before awareness of a problematic situation exists.
Stand fast	Identify where students agree upon an experience, outcome, and/or correction without taking it up as a reflective object in inquiry. It is when students act by habit, or what they do not question.
Encounters	Identify individual's encounters when transacting. This step includes distinguishing and structuring encounters that lead towards or away from fulfilment of the purpose. Encounters could involve oneself, other individuals (i.e., peers, teachers), and/or the physical world.
Relations	Identify which relations (or connections) are created to fill the gap(s). This step includes distinguishing and structuring relations that lead towards or away from fulfilment of the purpose. What an individual does to bridge the gap can create a connection between what is currently understood and the intended purpose and how these are valued.

Rules

In the first zoomed-in perspective –*Rules* – the data is taken from one, 60-minute, video-recorded (Class 1, Lesson 1, 2020.02.28) PE lesson. From the video recorded lesson, three illustrations pertaining to *Rules* are presented as sequential learning situations in the lesson. The first illustration unpacks an affective learning situation and observable affective indicators utilising the PEA concepts (see Table 9 for affective indicators, p.129). It illustrates *gaps* that occur when rules of a game or activity were not adhered to. Student *encounters* impact affective learning through specific interplay with transactional influences (e.g. prioritising a high value object), and the *relations* that were constructed – potentially because of the *encounters* – to bridge lingering *gaps*.

The remaining two illustrations elaborate on the affective indicators observed. Each illustration focuses on five students, from the class of 22, who represent Team Green. Extracts from the team's corresponding SRI (Class 1, SRI, 2020.03.02) were included to support interpretation of the video recorded data. Similar to Östman and Öhman (2022), Table 11 provides a summary of the five PEA concepts from all three illustrations linked to *rules*. These concepts were used to generate findings in the data related to affective learning.

Table 11. PEA summary of *Rules*.

Purpose	Gain as many points as possible, while adhering to the rules, to win the game.
Gaps	Breaking a rule to retain high value objects and win the game.
Standfast	Winning is important.
Encounters	1) Teammates varied in their encouragement and disagreement when breaking a rule (interpersonal). 2) Teacher-researcher often interjected to reiterate the rules (institutional). 3) Prioritising high value objects affected students' feelings towards the game (physical world).

Relations	Recalling how the game was played on a previous occasion helped students navigate challenges with the rules.

Illustration 1

This illustration is in the context of students taking part in an inter-House game called Rob the Nest. In the class, there were four teams, or Houses, made up of five or six students. The teacher-researcher's *purpose* in the lesson was for students to remain bound to the rules of the game to promote a fair and equitable game for all. A specific rule stated by the teacher-researcher at the beginning of the lesson was that only one student from one team could take (steal) an object (treasure) from another team. When that student returns to drop the object into their team hoop (nest), the next student in line can have their turn. The teacher-researcher explained at the beginning of the game that objects were valued differently (e.g. an orange platypus is worth five points, other objects are worth one point). This point system was a new experience for the students who had previously played the game where every object was worth one point.

Game begins, Adam is the first runner for a team of five. The others wait, shouting instructions which were difficult to hear due to other noise being created by opponents.

1. Chloe: Look (pointing for Adam) there is the platypus, it's going to Team Purple, you need to get it.
2. Adam: Ok, ok, ok.
   All members of the team take a turn sequentially. Three out of the first six runners retrieve the highest value object (orange platypus), including Al on his second run.
3. Chloe/Ana/Jane: Go Adam! Go Adam!
   Chloe, Ana, and Jane jump up and down while shouting at Adam. Adam returns, drops the object in his hoop and stands on top of the platypus to conceal it.
4. Teacher-Researcher (T-R): Adam, Adam, Adam, step off the platypus.

Adam steps off to reveal the platypus. The platypus is taken by an opponent from Team Blue to the disappointment of those in Team S. T-R approaches the group.

5. T-R: Do you think that's being fair if you're standing on it [the orange platypus]?
6. Momoka: We need [the] points.
   Ana returns with an orange platypus. Chloe places it under her legs as she kneels on the floor to conceal it. Both cameras pick up that she looks at the T-R as she does this. The T-R is not looking at her when this action takes place.
7. Jane: I got it! I got the platypus!
   Ana, an opponent from Team Purple and Team Red follow Jane and take one platypus each to return to their team.
8. Chloe: They took it straight out of my hands.
   Chloe attempts to highlight how objects can only be taken when placed on the floor.

In the *encounter* between the teacher-researcher and the team (L4-6), a *gap* is expressed by one student (L6): how to gain the most points to win the game, without breaking a rule, when the highest valued object continues to be taken from them by other teams. Team Green is not able to immediately bridge this *gap* – the orange platypus continues to be taken and there were several attempts to conceal the object when they eventually retrieve it. There were expressions of *delight*, *excitement*, and *joy* at taking the high value object: combinations of jumping, shouting, and smiling were observed in the video data. Shortly after dropping the object in their hoop, team members displayed signs of *disappointment* and *frustration* at losing the object. Retaining the orange platypus remains problematic throughout the game. Therefore, the gap and fluctuating affective experiences lingered. The contrasting emotions impacted the individual and team decisions.

The game continued for three more minutes. At the end of the game, the team had no objects in their hoop. They expressed their disappointment by shouting to opponents

how they had no points. Students' feelings of *embarrassment* and *disappointment* were revealed through the public acknowledgement of the result. The conversation continued between teammates.

9. Jane: We didn't get any [points].
10. Ana: I can't believe we didn't get any [objects].
11. Chloe: Momoka go to the back, I'm first.
    The team sits down while opponents count their points. T-R goes around each team to ask for their total and explains how some teams broke the rules by attempting to hide or conceal objects. The game is reset, each team is given time to discuss how they will play the game this time.
12. Adam: We need to be quicker than Team Red to steal the platypus.
13. Chloe: No, we need to go to Team Purple, they have the most.
14. Ana: Why don't we steal from the middle like we used to, there is more treasure.
15. Momoka/Jane: Yeah! Yeah! The middle is better.
16. Chloe: Ok, ok, it doesn't matter about the others. Adam you need to go to the middle. Forget about the others, you go to the middle.

To bridge the lingering gap (i.e. how to gain the most points to win the game without breaking a rule), Adam and Chloe begin the team conversation discussing which opponent they should 'steal' objects from (L12-13); a continuation of the current approach, targeting the team who they believe demonstrated the most *physical prowess* while hiding high value objects. In contrast, Ana relates their current situation to previous lessons of Rob the Nest (L14) where all objects where worth one point and where they would not need to worry about losing high value objects. Momoka and Jane agree (L15) and were then supported by Chloe (L16) who changed her mind. Chloe reflected on this during the SRI:

> Chloe: They [opponents] kept on stealing [the] platypus. [Even] when I sat on the platypus.
> Jane: They would know because [we] were like sitting there. Hmmm suspicious. Do they have the orange platypus?

(Class 1, SRI, 2020.03.02)

The construction of this *relation* (i.e. to recall how the game was played on a previous occasion) was an attempt to bridge the *gap* that would lead students away from the *disappointment* and *frustration* of game one and towards the feeling of *success* and gaining more points. Collectively the team intended to be *competitive* and gain significantly more points during game two while adhering to the rules. The students' decision to take lower value objects (L14-16) demonstrated an acknowledgement that taking and then concealing high value objects was detrimental to their affective experiences and that it was possible to be successful by following the rules.

Illustration 2

The second illustration is a continuation of the first, taking place during the second game of Rob the Nest.

Game begins, a platypus is the first object (treasure) taken. Adam sits on top of the only object in the hoop (nest).

17. Jane: Adam that's cheating!
18. Momoka runs to collect an object.
19. Chloe: Go, go, go!
20. Chloe and Adam attempt to hide a bonus point object under another (less valuable) object. An opponent comes across and takes the bonus point object.
21. Chloe: See I told you [Adam] not to hide it.
    Game continues, Adam has his go to collect an object.
22. Momoka: Adam no, don't take that [a bonus point object].
23. Jane/Ana/Momoka: Adam we have a plan [to not steal the bonus point objects]!
24. Ana: Adam you have to follow it [the plan].
    Adam looks down at the floor, appears to be unhappy with the comments.

25. Chloe: Adam don't get the platypus [bonus point object].
    Arms thrown up in the air, stomp of the foot, talking over one another, confrontational body language.
26. T-R: One minute left!
27. Chloe: Hurry! We don't need the platypus [talking to an opponent as they take the bonus point object].
    Adam is seen taking a single point object. Other team members were shouting encouragement, waving their arms, and jumping up and down.
28. Ana: We have the last yellow Turtle!
29. T-R: Thirty seconds!
    Jane returns with an object while Team Green jump up and down, and shout encouragement.
30. Chloe: We need to move faster guys.
    Whistle is blown for the end of the game. All members celebrate together by jumping and cheering.
31. Ana: We got a lot!
    At the end of the game, the team finished second with the second most points.

Using PEA indicated that students' uses of certain words (e.g. hurry) and expressions (e.g. jumping on the spot) *stand fast* when *encountering* others. These words and expressions demonstrated a desire for students to win the game, the prospect of winning was not questioned by students and therefore *stands fast*. For Adam, his decision to immediately sit on the high value object at the beginning of the game demonstrated his belief that to win, and therefore feel *successful*, it was necessary to continue taking the high value object. He continued to break a rule of the game and conceal the object, contrary to his teammate's intentions. His actions contradicted the view of his teammates, causing a *disagreement* with Jane during one *encounter* (L17). Adam's response was to stand up and reveal the object after the *encounter*. The interpersonal influence Jane exerted led to initial feelings of *embarrassment* and *frustration* for Adam but prevented the whole team from being penalised and potentially a collective feeling of *disappointment*. Chloe reinforced Jane's position to remain within the rules (L21). Shortly after, the team's attention turns to *celebrating* physical exertion

(L27;30), *encouraging* their peers' effort by cheering, jumping, and waving. Collectively these *encounters* forced Adam to change his habit of concealing the object, he had to adjust and play the game differently to feel *success*.

The institutional influence (i.e. the instruction of the teacher-researcher; L4-5) endured from the first game when reaffirming the rules with most members of the team. There was no need for the teacher-researcher to interject during the second game due to the team's ability to self-organise. However, the pressure to continue following the rules were tested by the teacher-researcher in the second game with a countdown to the end of the game (L26; 29). Despite this, the decision by the students to take objects from the middle hoop (which did not belong to any team) and not conceal objects remained the focus until the end of the game:

> Ana: …if you get orange platypus everyone will steal from you, even if you hide it, and you'll end with zero. It's also good to get [objects] from the middle. Because the middle doesn't really have enough good things [high value objects] there.
>
> (Class 1, SRI, 2020.03.02)

At the conclusion of the game, the team finished second. There was a contrast in the emotions conveyed by students in both games. A variety of affective indicators were observed throughout the first game (e.g. *delight*, *excitement*, *joy*, *disappointment*, *frustration*, *embarrassment*), which were often volatile due to the decision to unsuccessfully hide high value objects from opponents. In contrast, the decision to create a strategy to win that remained within the rules resulted in *elation* and *joy* being expressed by members of the team (L28; 31), due to their comparative *success* at the end of game two.

Illustration 3

The final illustration is drawn from the same lesson and class. Students in Team Green were impacted by the rules of a different activity, which created a new gap (i.e. to jump one after another, to share the opportunity to take part). The harmony within the team was disrupted by the challenge of jumping further than other teams. In the Standing Long Jump competition, students jumped as far as they could and measured their jump using lines on a mat. Like Rob the Nest, it was an inter-House competition. The video data indicated students regarded this as an opportunity to display their *physical prowess*.

Standing Long Jump practice begins, the teacher-researcher announces that each student has one jump and then waits until their teammates have had a jump before jumping again. Chloe takes more jumps than her teammates, breaking a rule of the activity. Adam has fewer jumps than his teammates leading to a feeling of *frustration* with Chloe, displayed through his change of facial expression and turning his body away when she attempts to interact.

32. Chloe: My turn.
33. Adam: Wait, what about mine.
34. Chloe: I can jump further.
35. Adam: It's my turn. No, stop, no.
    Chloe steps in front and jumps. Adam moves to the side of the line, frowning and sits down. Ana and Jane unsuccessfully attempt to bring Adam back into the activity.
36. Ana: Come on Adam, you can go in front of me.
37. Jane: Yeah come on, you [Adam] go.
    Adam refuses and remains seated. The activity moves on, the T-R states that the competition will begin soon. In the competition, every student needs to jump once and record their points, which were added up for a team total. Adam continues to sit on the side, each member of his team takes their turn. Chloe steps up to take Adam's jump.

38. T-R: Adam, you're up mate. You can't jump for him [Chloe]. If he's not jumping, you don't get a score.
    Chloe moves to the back of the line, Jane steps forward.
39. T-R: Jane you've already jumped as well haven't you. This should be a final jump for each House. You're not going to jump Adam?
    Adam steps up reluctantly.
40. T-R: Right, thank you. Everyone swing your arms and go.
    Adam and three other students from different Houses jump.
41. Chloe: Adam you got four! You got four!
    Chloe claps excitedly.
42. Jane: Yay! Quick add it up.
    Ana pats Adam on the back and smiles at him. The team finish second because of Adam's jump.

Chloe's *confidence* to demonstrate her *physical prowess* by jumping more often than her teammates (L32), was at odds with the rule stated by the teacher-researcher that each team should take it in turns to jump. Her decision created conflict with a teammate (Adam) who's reaction was to not take part at all. His *annoyance* towards Chloe grew into a feeling of *despondence* when he was not listened to (L35). His frowning face, tense shoulders, and clenched fists verified these feelings during the video recording. Chloe's response was influenced by her priority to perform and win. The teacher-researcher's response was to pressure Adam into jumping and complete the activity (L38-40). Adam's motivation to jump changed when his *discontentment* was publicly announced to the class by the teacher-researcher. It was not until after Adam jumped, when Chloe exclaimed her *delight* at the points gained from his attempt (L41), that he showed *joy* in the decision to take part.

Jane and Ana joined the celebrations, but their response was not to focus on the points gained, highlighted during the SRI:

> Jane: You know, I'm so proud of Adam. You're like 'you got five!'

> Chloe: No, not five he got four. I got five. I was the person in the team who got five.
>
> (Class 1, SRI, 2020.03.02)

It was clear in the final illustration that Adam and Chloe struggled to remain within the rules of the activity. However, the *empathy* and *compassion* shown by Jane and Ana towards Adam acted as a reward for taking part and remaining within the rules. Initially unsuccessful in their first attempt to console him, Jane and Ana celebrated Adam's decision to take part and contribute to the team's success at the end of the activity. Although breaking a rule created negative feelings and conflict between students at different points in the lesson, students displayed indicators of affect which positively impacted different areas of learning (e.g. physical, cognitive, social) for all students in the team. Students acted alone in this regard, with no direct support or facilitation from the teacher-researcher.

Summary of Rules

Using a zoomed-in perspective of the data provided an opportunity to delve deeper into observed affective learning processes. *Rules* – the pre-determined codes of behaviour that should be followed by all individuals in the activity or game – was the first of three specific learning situations that was common across the video recorded data. A range of affective indicators were observed in the data (see Table 9, p.129), which indicated learning was non-linear, challenging, and complex for students. Using the PEA concepts (see Table 10, p.138), I was able to identify the interpersonal (e.g. the verbal exchanges between teammates), the institutional (e.g. the instruction of the

teacher-researcher), and the physical world (e.g. high value objects) *encounters* that brought students either toward or away from fulfilling the affective *gaps*. The three illustrations of *rules* begin to address the research questions of this study, specifically research questions one and two (see p.3), by identifying a number of indicators of the affective domain that were observable in a PE context (see Table 9, p.129), and distinguishing the pedagogical processes that influence indicators of the affective domain (e.g. teammates interplay when breaking a rule during Rob the Nest).

Tasks

In the second zoomed-in perspective –*tasks* – the data was taken from three video-recorded PE lessons. There are three illustrations relating to *tasks*, each from a different class (Class 2, Class 3, and Class 4) and involving a different game or activity (Health-Related Fitness, Hoop Challenges, Throw and Catch). The first illustration (Class 4; Health-Related Fitness) frames affective learning in a lesson that focused on developing health and fitness outcomes, showing *gaps* that occur when the task is too difficult, or students were not engaged with the task. The second illustration (Class 2; Hoop Challenges) considers the observable affective indicators in a challenging team environment. The third illustration (Class 3; Throw and Catch) examines a student's behaviour when completing a throw and catch exercise. Table 12 provides a summary of the five PEA concepts from all three illustrations linked to *tasks*.

Table 12. PEA summary of *Tasks*.

Purpose	Jump over the skipping rope; put all bean bags in a hoop 20 meters away; bounce ball into a hoop for partner to catch.
Gaps	Unable to fully complete the task.
Standfast	Completing the task is important.
Encounters	1) Teammate success or completion of the task impacted indicators of affective such as confidence and determination (interpersonal) 2) Teacher-researcher instruction of task did not always lead to the successful completion of the task (institutional) 3) Skipping rope, ball, hoop, bean bag, gym space added challenge to completing the task (physical world)
Relations	Replicating the successful methods or techniques of others often led to the completion of the task.

Illustration 1

The first illustration begins with two students taking part in a Health-Related Fitness (HRF) activity: skipping with a jump rope. There were six activities in total, which students worked through during their 60-minute lesson. The *purpose* of the lesson was to develop an understanding of the types of activities to improve agility, balance and coordination. Specifically in this activity, students were challenged by the teacher-researcher to jump over the rope in different ways.

1. T-R: Can you go backwards? Try and go backwards now.
2. Oscar: What?
   Oscar holds the rope up to the T-R, implying the T-R should show him how to do it. The T-R does not take the rope but imitates holding a rope.
3. T-R: So you put it in front, you put it back over your head so it goes backwards.
   Oscar attempts but skips forwards.
4. T-R: So that's forwards. So put it in front and swing it back over your head.
   Oscar successfully swings the rope over his head and behind his body and times his jump, so the rope goes under his feet.
5. T-R: Yeah! That's backwards.
   Jayden observes Oscar go backwards two more times. The rope is passed to Jayden who attempts the same challenge.

6. Jayden: Argh!
7. T-R: Put it over your head first and then jump. So do it over your head.
   Jayden has another attempt but goes forward.
8. T-R: Otherwise if you jump too early you won't get it under you.
9. Jayden: I cannot do it backwards.
10. T-R: You can't do it backwards? That's fine, just go forwards, whatever works.
    T-R assists another student. Jayden observes Oscar skipping backwards, they swap, and Jayden has another attempt. He successfully jumps backwards.
11. Jayden: I did it!
    T-R moves on to observe another group. Jayden continues to practise skipping backwards alongside Oscar.

(Class 4, Video recording, 2020.09.28)

The task presented to Oscar and Jayden was to use their rope to skip or jump over it as it swings around their body. Their understanding was stretched when challenged to jump backwards (i.e. rope swings over head from front to back). Initially Oscar's response was *dismissive* (L44), asking the teacher-researcher to model the technique by offering the rope. A *gap* existed in Oscars understanding and *confidence* to skip backwards instead of forwards. The *gap* did not endure for long as Oscar successfully skipped backwards after several attempts. Jayden's failed attempt to skip backwards meant the *gap* remained, to his *frustration* and *annoyance* (L48). Through personal *encounters* with the teacher-researcher, Oscar (L43-47) and Jayden (L49-52) have different affective experiences despite receiving similar instructions. Oscar's capability to adjust and skip backwards after three failed attempts showcased his *determination* in the video data. In contrast, Jayden's exclamation that he cannot skip backwards (L48; 51) was an expression of his *self-awareness* and *irritation* at not completing the task.

Despite initial verbal assistance from the teacher-researcher (L49; 52), Jayden is left to continue practising his skipping technique with Oscar. It was clear in the data that Jayden had observed Oscar's success at skipping backwards on several occasions, and Jayden knew he could already skip forwards. These two experiences created a *relation* that resulted in Jayden skipping backwards. Jayden completed the task, his ability to skip backwards captured in the video recording. However, when observing Jayden, it was apparent that *perseverance* and *resolve* were two key affective indicators necessary to overcome this skipping challenge in PE.

Illustration 2

In the second illustration, a team of students (Team Blue) were attempting to move five objects (bean bags) from one hoop to another hoop placed 20 meters away (i.e. the task). Two conditions placed on all teams in the class by the teacher-researcher was that 1) they could only move one object at a time, and 2) when in possession of the object that students could not move their feet.

T-R approaches Team Blue who were in discussion about reviewing their method for moving objects between their hoops.

12. T-R: You don't want to do that [copy other teams' method]?
13. Max: No.
14. Jin-Yang: Yeah.
15. Amaya: Yeah.
    Two other members nod their head, one other shakes their head.
16. T-R: You [four] want to do it, you [two] guys don't. Why not [copy the other teams]?
    Max puts his hands on his head, thinking of a response.
17. T-R: What's your idea instead then, if you don't want to do it [copy other teams' method]?

18. Mir: We want to do it.
19. Zoe: Just throw it.
20. T-R: Has that worked yet though?
21. Zoe: No.
22. T-R: Have you got any in? How many have Team Green got in? They're about to put three in.
    All members of Team Blue watch.
23. T-R: So they're winning, but you want to stick to your idea that doesn't work?
    Team Blue start to discuss and eventually reorganise.
24. Jin-Yang: Come here, you stand there.
    Jin-Yang places Max and Zoe in front, creating a line to begin passing an object along. Max throws the object when he's approximately 15 meters away from the hoop and misses.
25. T-R: Oh Team Blue! Pick it [the bean bag] up and go back to the beginning.
26. Zoe: Why did you throw it there?
27. Max: I could have got it in.
28. Zoe: No, you couldn't.
29. T-R: Max it's on the floor, you need to pick it up and start again.
    The line is created again, with all members of Team Blue. They begin to throw the object from 10 meters and continue to miss the hoop.
30. Mir: Why are you throwing it from here?!
    Jin-Yang reorganises the team again and Team Blue pass an object down the line. Mir throws from 1 meter away and gets the object in the hoop. Team Blue repeats the technique, but time is up. The other three teams have finished the game, achieving five points. Team Blue achieved one point.

(Class 2, Video recording, 2020.09.22)

Throughout the illustration Team Blue struggle with the task (i.e. to place all their objects in the hoop 20 meters away from their starting point). This created a *gap* that was not immediately resolved. The team *disagree* on the best method for bridging this gap, and struggled to find solutions that were unanimously accepted by all members (L54-64). The students desire to get all their objects in the hoop as quickly as possible remains *stand fast*. There were various *encounters* which presented opportunities to find solutions and bridge the *gap*. The institutional influence of the teacher-researcher is minimal in this illustration despite repeated interventions to provide Team Blue with guidance (L54, 58, 59, 62, 64, 65). The physical environment (i.e. being 20 meters

away; throwing a bean bag into a hoop) impacted their approach to the task, some students (e.g. Zoe and Max) were *confident* that they could throw a bean bag accurately into a hoop from 20 meters away (L55, 61). Their failed attempts did not dissuade or initially impact their decision making although it did affect others (e.g. Jin-Yang and Mir) who tried to copy the methods of other teams.

Team Blue's opponents demonstrated a successful technique (i.e. pass the object down a line of students) that was ignored by Zoe and Max who attempted to showcase their *physical prowess* by throwing the bean bags 20 meters into the hoop. Jin-Yang intervenes (L66) after observing the other team's technique. When the task remained incomplete the student's *frustration* was expressed through *conflict* (L68-70). Eventually, *encounters* with teammates became reciprocal, that is students finally responded to each other and settled on an *agreed* plan rather than focusing on their individual *physical prowess*. It led to a *relation* being constructed (i.e. pass the bean bag down the line and drop it into the hoop) that assisted the partial completion of the task. Although this success was initially celebrated, the lesson was ended before they finished transporting all the bean bags into their end hoop. This reignited the *frustrations* and *discord* that had occurred earlier on in the illustration as individual students (i.e. Max and Zoe) attempted to blame others for the lack of team success and in doing so failed to recognise that a quicker change in their actions would have helped the team find more success.

Illustration 3

In the third and final illustration, two students were tasked with throwing, bouncing, and catching a tennis ball. They need to bounce the ball inside a hoop; the hoop was placed in between them. In this activity, students can determine the distance they stand from the hoop, but the task remains the same.

Harrison throws ball hard and fast, missing the hoop and resulting in Alex chasing to collect the ball.

31. T-R: Did that go in the hoop Harrison?
32. Harrison: Yep.
33. T-R: Are you sure? It's got to bounce in the hoop.
    Alex returns with the ball.
34. Alex: We've both got six [points].
    Alex throws and bounces the ball to Harrison, who does not catch the ball.
35. T-R: Remember you only get points if you catch the ball. You want him to catch the ball otherwise you don't get any points.
    Harrison throws the ball back to Alex with power, missing the hoop. Alex misses the catch, turns to chase after the ball.
36. T-R: No I think you need to be a bit closer. You need to get it in the hoop.
    Harrison has the ball again, stands closer to the hoop, throws and the ball bounces high.
37. T-R: Stop leathering it at him, you want to give him something he can catch.
    Harrison laughs.
38. T-R: Bounce it back [Alex to Harrison]. So you want him to catch it, yeah.
39. Alex: We have nearly 10 [points].
40. T-R: Harrison come here by my toes, bounce it so he can catch it.
    Harrison throws and bounces the ball, Alex catches it.
41. T-R: Good, well done. 10 points, good job. I want you to try to get to at least 30 [points].
42. Alex: 30 [points]?
43. T-R: Yes, you need 20 more.
44. T-R leaves and returns 2 minutes later. Harrison throws and bounces ball to Alex who catches. Alex returns the throw, Harrison catches it.
45. Alex: 14 [points].
46. T-R: Good, nice Harrison!
47. Alex: Yes!
    Alex celebrates and Harrison smiles. Harrison highlights that he caught the ball by holding it in the air.

(Class 3, Video recording, 2020.09.09)

In the illustration above it was difficult to fully assess whether Harrison was finding the task challenging or whether he was intentionally not completing the task as instructed. Subsequently, he found it *amusing*, a common occurrence in Harrison's PE lessons. In my role of as teacher-researcher it was possible to contextualise Harrison's actions through intimate knowledge of his behaviour in previous lessons. Harrison was captured in video footage smirking and glancing towards the teacher-researcher while he was throwing the ball (and missing the hoop). Contextual knowledge would suggest Harrison was deliberately missing the hoop (L73-75) and therefore intentionally not completing the task.

However, two encounters led to a change in Harrison's actions: 1) the intervention of the teacher-researcher to instruct Harrison on the technique for throwing the ball (L77-80, 82), and 2) and 2) Alex's focus on scoring points resonates with Harrison as a measure of *success* (76, 81, 84, 87). Upon successfully throwing and catching the ball, Harrison is praised by the teacher-researcher and *celebrates* with Alex. The *joy* that Harrison displayed had a positive effect on his *confidence* too. He continued to showcase his throwing ability, celebrating when *successful* (i.e. smiling and holding the ball in the air to prove he caught it). Harrison's behaviour and attitude towards the task appeared to change because of the attention and praise given by his partner and the teacher-researcher, which appeared to reinforce his *desire* to complete the task of throwing and catching.

Summary of Tasks

The second zoomed-in perspective – pertaining to *tasks* – reported on data from three different video-recorded PE lessons. *Tasks* involved exploring how and what students did to complete the game or activity. Three different activities and games were used to emphasise the distinctive ways affective learning took place in a PE lesson. Affective indicators continued to be complex to observe, indicators varied from *irritation* to *determination* when the task became challenging (see Table 9, p.129). In all three illustrations students built different *relations* through a range of *encounters* with each other (i.e. interpersonal), the teacher-researcher (i.e. institutional), and objects (e.g. bean bag) that were required as part of the task (i.e. physical world). The influence of the teacher-researcher in each of the illustrations related to *tasks* was prevalent compared to *rules*. Students required additional guidance, support, and praise during each of the tasks, requiring the teacher-researcher to interject regularly. Using the PEA concepts, it was possible to observe affective indicators that acted as indicators of learning in the *tasks*, thus addressing the first research question of this study (see p.3). Students displayed behaviour that was not linear but often presented challenges and obstacles that needed overcoming (e.g. skipping backwards). Analysis of the *encounters* that took place begin to address the second research question of the study – to understand the pedagogical processes of the affective domain – by identifying key transactions between the individual student and their environment (i.e. teacher instruction, peer interactions, and the use of specific PE equipment). PE equipment (e.g. a bean bag) and teacher-researcher *encounters* shaped observed affective indicators that impacted affective learning.

Relationships

In the third zoomed-in perspective – *relationships* – the data were taken from three video recorded PE lessons involving three different classes (Class, 2, Class 3, and Class 4). *Relationships* were defined as students' interactions and connections with others over what was valued and meaningful. From the video recorded lessons, three illustrations are presented to showcase how *relationships* within PE lessons impact student affective learning. The first and second illustrations (Class 3, and Class 4; King Ball) utilised the PEA concepts to examine an affective learning situation in a modified game of dodgeball. Affective indicators were observed through fractious relationships (i.e. *encounters)* between opponents, which created *gaps,* in the form of *disagreements* between teammates and/or opponents. The influence of *encounters* between students, the teacher-researcher and aspects of the physical world differed from *rules* and *tasks*.

Aspects of the physical world became more significant in a number of situations (e.g. being hit by a ball). This acted as a catalyst, intensifying the interplay between students, and often resulted in the teacher-researcher intervening to reduce or remove conflict. Subsequently, *relations* were often teacher-led rather than student-led. The third illustration (Class 2; Tag Games) elaborated further on the affective indicators (e.g. excitement, disagreement, annoyance) that were observed which required students to

create their own tag (evasion) games in the lesson. Table 13 provides a summary of the PEA concepts from all three illustrations that focused on *relationships*.

Table 13. PEA summary of *Relationships*.

Purpose	To develop teamwork skills (e.g. collaboration and communication).
Gaps	Disagreement between teammates and/or opponents.
Standfast	Winning the game or competition.
Encounters	1) Relationships with teammates and opponents often changed according to the individual's purpose in the activity (interpersonal) 2) Teacher-researcher authority in divisive situations appeared to be absolute (institutional) 3) Equipment (e.g. balls) could change the affective learning environment and subsequent relationships between students (physical world)
Relations	Students often struggled to create their own *relations* and relied on the intervention of the teacher-researcher to resolve *gaps*.

Illustration 1

In the first and second illustration each class was participating in a modified dodgeball game called King Ball. Two teams, each with 11 mixed-gendered students, played the game by throwing soft foam balls at each other. If a student was hit, they crossed the half court line and stood on a wooden bench labelled 'jail'. They remained in jail until a 'free' teammate threw a ball which was then caught. Only one student was able to leave jail when the ball was caught; all students in jail could leave if the King Ball was caught. The *purpose* of the game was to develop teamwork in addition to a variety of locomotor and manipulation skills (e.g. throwing, catching, dodging). Students were expected to self-govern, that is if they were hit by an opponent's ball they would go to 'jail' immediately without being told. This implied each student would be trustworthy

and truthful throughout the game, creating a friendly yet competitive atmosphere for students to engage in physical activity. However, each team wanted to win the game (i.e. *standfast*), and the first illustration begins with students in *disagreement* about whether a person had been hit by a ball, or not.

1. Amir: Mr Patz (T-R), I hit Molly so many times and he did not go to jail.
2. T-R: Wait a minute, she'll go into [jail] in a second.
3. Emma: First it's a 'she', second you didn't hit her.
4. Amir: I did hit her.
5. Ayako: And she said 'oh no'.
6. T-R: Wait, right.
   Conversation continues between members of the class, pointing fingers and having private conversations within the group.
7. Amir: You [Tom]…
8. T-R: Who?
9. Amir: You [Tom] hit George and he didn't go to jail.
10. George: No!
11. T-R: Ah, yeah, well, I mean with mine it's a bit…
12. Emma: Does it count if it rolls on the ground and then hits you?
13. T-R: No, it's only allowed one bounce.
14. Emma: So you [Amir] didn't [hit Molly].
15. T-R: We'll clear that up a bit now.
    T-R addresses the whole class to reinforce the rules and etiquette of how to play the game.
16. T-R: Be honest, if you get hit please go to jail, because otherwise it ruins the game for everybody.
17. Emma: And it's not fun.
18. T-R: It's not fun if that happens. So please just make sure you go to jail if you do get hit. That way we stop any sort of arguments, or anything happening.
    T-R wraps up so the next game can begin. Game begins, students run towards the balls to collect, and 'activate' by touching the wall and throwing at opponents.
    Ayako throws a ball and it hits Molly.
19. Ayako: Molly! I hit Molly! I got Molly.
20. T-R: Molly…
21. Molly: It hit the floor.
22. T-R: That's allowed, if it hits the floor and hits you it's allowed.
23. Molly: It didn't hit me.
24. T-R: You just said it did [hit you].
25. Ayako: No. It hit her foot.

26. T-R: Molly…please play the game properly. Play the game properly. Leave the ball Molly. You don't get to decide, you're in jail, so you don't get to make that choice anymore.
    Molly goes to jail. She catches a ball which allows her to be released and re-join the game.
27. Ayako: Mr Patz (T-R), Molly is cheating. She stole the ball off me.
28. T-R: Sorry.
29. Ayako: She stole the ball off me so she could trick you.
30. T-R: Ok, I'll have a watch.
    The game continues without additional intervention from the T-R.

(Class 3, Video recording, 2020.12.09)

This dispute was initiated by one student (Amir) who felt aggrieved at the lack of honesty by their opponent when they were hit with the ball (L90). The result was a melee of arguments and counter arguments between opponents (92-104) about what happened. Thus, this series of *encounters* created a *gap* (i.e. being unable to agree) that was not immediately resolved. It was possible to observe the expressions and gestures of *annoyance*, *frustration,* and *anger* felt by students through the mobile video recording. Students displayed several angry facial expressions, pointing fingers at opponents, and shouting over others that meant the *gap* was not immediately resolvable.

The intensity of these *encounters* between opponents (i.e. interpersonal) reflected the intensity of the game. Molly's teammate Emma was prepared to support her claim that she had not been hit (L92), even if she had not been aware of what had happened (i.e. that Molly was hit). The feeling of unwavering *loyalty* between teammates resulted in conflict between opponents, despite many opponents being friends in the class. The physical world of the students was constantly changing as balls were always being gathered and thrown, teammates were often hit and went to jail before being released seconds later, and the King Ball was always sought after as a highly valued object. The

failure to resolve the disagreement in this illustration between students led to the intervention of the teacher-researcher (L109; 111; 113). Initially attempting to guide students through the resolution process (L105), it required the institutional authority of the teacher-researcher (L115) to create a *relation* and resolve the *gap* (i.e. being unable to agree). The impact on the *relationships* between teams appeared to be sufficient that no further interventions by the teacher-researcher were required.

Illustration 2

In the second illustration, a different class (Class 4) also played King Ball. A similar *encounter* occurred between students (i.e. interpersonal) from opposing teams regarding whether a student was hit, or not, by a ball.

31. T-R: Did you get hit? You don't know?
32. Riley: Mr Patz (T-R), I hit Sixian two times.
33. T-R: You hit who?
34. Riley: Sixian.
    Riley points at Sixian.
35. T-R: Oh ok, I'll keep an eye on her.
36. Riley: She just ran away and didn't say anything.
37. T-R: I'll ask her now.
    T-R approaches Sixian.
38. T-R: Sixian did you get hit?
39. Sixian: I used the ball to block it.
40. T-R: Oh you used the ball to block it, ok.
41. T-R moves away and game continues. Sixian does not go to jail for the entire game because she was not hit with the ball.

(Class 4, Video recording, 2020.11.30)

This illustration presents a similar *gap* where two students from opposing teams disagreed on whether one had been hit by the ball (L121). In the illustration, there was

no verbal exchange to observe the *disagreement*. Sixian continued to play the game, which antagonised Riley who approached the teacher-researcher for support and a resolution. Like the first illustration, the institutional authority of the teacher-researcher appeared significant in the situation. The decision of the teacher-researcher to *trust* Sixian (L129-130) was based on prior knowledge that she did was honest in situations where dispute may occur. However, this affected Riley who lingered on the thought of injustice but ultimately meant that he should not continue with the protest as the game continued and the situation had moved on for everyone else. The *gap* is does not linger for the teacher-researcher and Sixian and is immediately resolved from their perspective, but it continued to linger for Riley throughout the game.

Illustration 3

In the final illustration, students were required to create their own tag (evasion) game (i.e. *purpose*). Students were divided into their four House teams; this was made up of mixed gender groups of 11 individuals. Although students had played tag games previously, these games had been delivered by the teacher-researcher. Students in this lesson were required to collaborate and devise a unique tag game to showcase to their peers at the end of the lesson. The illustration begins with Team Blue playing a tag game in their section of the sports hall.

42. T-R: Who is the tagger? I can't tell who the tagger is.
43. Ashwin: I know!
44. Yu-Yang: I know!
45. Zoelle: I don't want to play.

46. Maya: I'm the tagger.
47. T-R: You've got balls, you've got cones, you've got bibs, you've got hoops. You could use something [to highlight who the tagger is].
    Ashwin runs off to collect equipment.
48. T-R: Wait, wait, wait, decide what it is you're going to use. If you only need one hoop, ball or bean bag then that's all you go and get.
    T-R moves off to observe Team Green.
49. Isaac: I have a really good game. I need bibs for my game.
    Isaac runs to gather bibs.
50. T-R: Ok, but have you all agreed on it? Have you agreed on it yet?
    Maya shakes her head; Teghan is looking down at her fingers and avoiding eye-contact. Isaac explains his game.
51. T-R: How do we know who the tagger is?
52. Isaac: I'm going to be the tagger; I'm going to go and get a bib.
53. T-R: Wait, wait, wait Isaac, not yet. Does everybody agree with that though?
    Maya and Eden nod and agree. No one disagrees.
54. T-R: How would you tag someone then?
55. Eden: Cartwheel tag [pointing at Maya and Teghan] and Ninja tag [pointing at Owen and Isaac].
56. Isaac: We do a karate chop [imitates action].
57. T-R: Well Ninja's do cartwheels so it's kind of the same thing. But how do you tag someone?
    Maya and Teghan try to explain their idea. Isaac shouts over the top of them and demonstrates his idea.
58. T-R: And then how would you set someone free?
59. Teghan: You would…
60. Owen: …boys chop like this…
61. T-R: Don't tell me, you have to tell each other.
    T-R moves to check-in with Team Red.

(Class 2, Video recording, 2020.09.15)

The game is initially played without any equipment. This leads the teacher-researcher to question how it is possible to identify the tagger (L131). Students express their *excitement* at coming up with an idea (L132-133) but without sharing or explaining their ideas. Ashwin in this example runs off to collect equipment without discussing and agreeing with his teammates first. Throughout the lesson, students who exerted their ideas and views loudly or more vigorously indirectly excluded peers from the conversation (i.e. interpersonal). This created a social hierarchy whereby the more forceful students were able to impose their ideas on the rest of the team. Students

displayed signs of disappointment when this situation occurred, either verbally (L134) or non-verbally (i.e. “Teghan is looking down at her fingers and avoiding eye-contact.”).

Similarly, Team Green decided to use equipment (i.e. bibs) but without the full consensus of the group (L138-139). This created a *gap* for both teams (i.e. unable to come to an agreement) that led to teammates opting out of the game. Team Green eventually combined two games (Ninja Tag and Cartwheel Tag) to ensure everyone remained *engaged* and *supportive* of the game. Two members of the group explained the method to ‘free’ teammates who had been tagged (L144-145). The teacher-researcher (i.e. institutional) dismissed this difference as trivial (L146) and focused on guiding the conversation towards aspects of the tag game that had not been decided (L147).

At the end of the lesson, ‘Ninja tag’ is presented by Team Green to Teams Blue, Red and Purple. They agreed that to save someone who had been tagged, an individual needed to cartwheel alongside them to ‘set them free’. A karate chop was used to ‘tag’ someone. All students participated in the demonstration despite the game being the creation of only three or four students from the group of 11. It was likely that ideas would be forced through without full agreement given the time constraints – 30 minutes to discuss and practice a new game – due to the number of students and complexity of social interactions. To bridge the *gap* (i.e. a lack of agreement), some students understood the necessity (i.e. construct a *relation*) to take on the role of passive teammate.

Summary of Relationships

The final zoomed-in perspective – *relationships* – focused on the interactions and connections between students. The relationships between teammates and opponents often changed due to the *purpose* of each student (i.e. interpersonal). Other environmental influences such as the teacher-researcher (i.e. institutional) and PE equipment (i.e. physical world) impacted the value and meaning of these interactions and connections in a variety of ways (e.g. was an individual hit by a ball, or not).

It was possible to observe a range of key indicators for affective learning (see Table 9, p.129) using PEA that addressed the first research question of this study (RQ1; see p.3). For example, in the third illustration when students were quizzed about coming to a consensus on the game (L139) three students reacted differently in their response: 1) shaking head in disagreement, 2) looking down due to a lack of confidence, and 3) assertively explaining their ideas. The interplay between students demonstrated a lack of consensus without students needing to provide verbal responses to the teacher-researcher's question.

It was possible to begin identifying the types of pedagogical processes (RQ2; see p.3) that strengthened and/or weakened the relationships between students too. In the previous example of three students responding to the teacher-researcher, a social hierarchy appeared to exist because of how students responded. Students who were

louder and more forceful with their ideas often dominated group discussions which eventually ended with them presenting their game to the whole class.

Chapter Summary

In this chapter, the PEA results highlighted how it was possible to observe indicators of affective learning (RQ1; see p.3) generated from video recorded data and supported with stimulated recall interviews. There were a range of affective indicators (see Table 9, p.129) recorded, however certain indicators were observed more frequently. Specifically, *excitement*, *confidence*, *joy,* and *frustration* were regularly observed. *Frustration* and similar affective indicators (e.g. *annoyance* and *disappointment*) implied that teaching and learning affectively was complex and often meant students did not learn in a fixed linear direction. These indicators of affective learning occurred in a variety of ways: 1) physical movement, 2) an expressive feeling, or 3) performing skills relevant to the activity.

From a zoomed-out perspective, it was possible to get a broad overview of the data related to the affective domain (Larsson and Quennerstedt, 2016). By zooming out it was possible to analyse action and interplay that was considered to represent overall affective learning situations across the data set, while zooming in provided an opportunity to delve deeper into the observed learning process of PE (Goodyear et al., 2021). For example, *rules* provided insight into the behaviours chosen by students who broke a rule in Rob the Nest. Breaking a rule (e.g. concealing a high value object)

highlighted how students prioritised winning the game over other aspects of learning such as tactical formation. Despite students admitting how they knew they were breaking a rule during the stimulated recall interview, the opportunity to demonstrate their *physical prowess* and win was too enticing. The consequence of these behaviours or actions impacted those around them (i.e. teammates, opponents, teacher-researcher) who occasionally supported but often questioned the purpose of breaking a rule.

Displays of *physical prowess* and the desire to win were always present in the video data and were considered to *stand fast* for students. In all three learning situations – *rules*, *tasks*, and *relationships* – the importance of winning was highlighted as a result of the *encounters* between the individual and their environment (i.e. interpersonal, institutional, and physical world). Students encouraged their teammates to 'hurry' and 'move faster' to gain as many points as possible, to complete the activity, or to get their opponent out. The teacher-researcher (i.e. institutional) was involved in all three learning situations but had considerably more influence in *tasks* and *relationships*, often with the responsibility of mediating and judging *disagreements* between students or teams. The influence of the teacher-researcher in these learning situations meant that *relations* were created by the teacher-research rather than the students in which to fill lingering *gaps*. This placed the teacher in a complicated and challenging position to encourage student learning in an emotionally safe environment, eliminating unfavourable affective experiences.

Addressing the second research question (RQ2; see p.3) of this study involved identifying the pedagogical processes that influence affective learning (i.e. interpersonal, institutional, physical world). In each of the learning situations (i.e. *rules*, *tasks*, *relationships*), illustrations were used to demonstrate how affective indicators were created by, or the creator of, student *encounters* with their environment and could lead to or away from affective *gaps* (e.g. observing a peer skipping backwards). *Rules* provided a different perspective to the illustrations the *tasks* and *relationships* as all three illustrations focused on the same group of students (Team Green) in the same class (Class 1) in one 60-minute lesson. In this illustration, the teacher-researcher was often reactive in the lessons to issues that arose (e.g. a student concealing an object). The type of instruction used throughout the lesson was often direct, with little questioning or guidance. The age (6-7 years) and number (22) of students, in addition to the distraction of another class participating in their PE lesson in the adjoining court meant that direct instruction was considered an effective way to deliver key information for the students to achieve the intended purpose of the lesson (i.e. movement development and team skills).

The physical world presented a unique dynamic compared to the interpersonal and institutional influences students experienced. The sports hall was a unique learning space for students who were normally situated in their classroom for most of the school day. The large, open space provided students with an opportunity to express themselves physically and emotionally. Students often wore brightly coloured bibs to distinguish themselves from others and used a range of equipment in their lessons (e.g. balls, bean bags, hoops, skipping ropes) that were not found in their classroom

setting. These features of the physical world presented challenges (e.g. how to use a skipping rope) and paradoxes (e.g. following the rules while stealing objects from others) that were different from routine constraints (i.e. sitting at a table) in the classroom.

The interpersonal (e.g. reaction to a teammate breaking a rule), the institutional (e.g. the instruction of the teacher-researcher), and the physical world (e.g. prioritising high value objects) influences were valuable for conceptualising affective indicators as they occurred and showed the process of learning in the affective domain was complicated as students often went backwards before they progressed.

CHAPTER 5: BARRIERS AND FACILITATORS TO SUPPORT THE AFFECTIVE DOMAIN

This chapter presents data that identifies and explains the barriers and facilitators of supporting the affective domain within PE (RQ3). Data informing this chapter was collected over the period of the COVID-19 pandemic, and was collected pre-lockdown (i.e. before March 2020), during the government-imposed lockdown (i.e. between March and May 2020) and post-lockdown (i.e. after May 2020). In turn, this chapter provides three different contexts through which to explain how the affective domain was supported. The data were approached through thematic analysis and initially demonstrated themes related to physical, socio-cultural, relational, and personal factors. However, at the point of writing the report to explain and conceptualise my findings (step 6; Braun et al., 2017) I encountered challenges when synthesising and integrating the data with existing empirical and theoretical literature. Instead, I drew on the theory of *practice architectures* to conceptualise these findings. At the same time, I noted differences between contexts that were temporal (i.e. pre-, during, and post-lockdown). Therefore, *practice architectures* became more relevant to interpreting and understanding the data to address RQ3. This chapter begins by exploring the relevance of *practice architectures* as a theoretical lens to interpret the data. The *practice architectures* concepts of cultural-discursive, social-economic, and physical-material are used to unpack the data further to examine how the affective domain thrived and/or was restricted.

Overview of Practice Architectures Related to this Study

In this section, I will synthesise and integrate the theory of practice architectures with selected findings of the study. The following paragraphs draw on my context as a teacher-researcher, the temporal dimensions (i.e. pre-lockdown, lockdown, post-lockdown), and the three arrangements (i.e. cultural-discursive, social-political, material-economic) to provide examples of how practice architectures relate to this study.

In the cultural-discursive arrangement, the language adopted by teachers aligned with traditional British independent school culture. For example, teacher-led instruction was the norm in PE lessons where students were told how to improve their sport and sport-skill performance. During lockdown this became problematic as teachers were constrained by the need to teach online and were not able to deliver a predominantly sport curriculum. Post-lockdown there were teachers and students who considered changing the traditional, pre-lockdown practices in the school to increase student voice and choice.

In the social-political arrangement, the social hierarchy within the school compromised of school leaders and parents, supported the prioritisation of sport and sport-skills in the PE curriculum. The school's expectations for students to improve their individual (i.e. skill) and collective (i.e. tactical) sport performance became a challenge for teachers, students, and parents during online learning as parents became more

involved in the learning process in addition to the constraints on access to physical space and equipment (i.e. material-economic). Post-lockdown teachers were frustrated with the return to a sport-specific curriculum that was influenced by external organisations (i.e. ACSIS), while students anticipated opportunities to participate with others in a variety of modified games, physical activities, and sports.

In the material-economic arrangement, physical spaces were designed for the implementation of a sport curriculum (e.g. football pitch). Fee-paying parents expected value for money in the access their child had to the facilities and the type of sports they would participate in. During lockdown, teachers delivered live and pre-recorded lessons that required minimal space and resources to maximise student participation. However, students were able to access different online channels (e.g. PE with Joe) and resources (e.g. swimming pool) that meant they could participate in their own physical activity without the need for teacher support. Students and teachers were enthused about using specialised equipment (e.g. gymnastic bars) on returning to school post-lockdown despite initial restrictions (e.g. small group sizes).

The following sections of this chapter consider each arrangement (i.e. cultural-discursive, social-political, and material-economic) and each temporal dimension (i.e. pre-, during, and post-lockdown) using data collected from eleven individual interviews (teachers) and eight group interviews (students).

Cultural-discursive

The first arrangement – cultural-discursive – explains what existed in cultural and linguistic beliefs, values and norms for teachers and students related to the affective domain. Specifically related to what teachers say in their practice and what students say about learning in PE. The discourse on the purpose and delivery of PE varied across each temporal dimension (i.e. pre-, during, and post-lockdown). Pre-lockdown, sport was used interchangeably to describe what students did in their PE lessons, reinforcing traditional practices of school sport and an emphasis on competition. During lockdown, the priority for PE was to engage students physically. The government-imposed lockdown had meant students were restricted in the physical activities they could take part in, while teachers were ill-equipped to react to the demands of online learning. Specifically, teachers were restricted in their delivery of competitive sport experiences and the application of acquired sport-skills. Post-lockdown highlighted the lack of skills students demonstrated beyond components of physical fitness (i.e. strength, endurance, coordination). For example, it was reported by teachers that students lacked empathy and compassion when communicating with their peers. School leaders, teachers, and students reflected on the online learning experience, identifying that PE was too narrow in its physical sport-specific approach, advocating for a diverse curriculum that also incorporated values, emotions, and social development. Table 14 provides a summary of the data from the cultural-discursive arrangement across the three temporal dimensions.

Table 14. Cultural-discursive summary across three temporal dimensions.

Pre-lockdown	Lockdown	Post-lockdown
British independent school traditions shaped teaching practices (e.g. sport-as-physical education, direct instruction). Sport was an integral component of the school culture (e.g. after-school clubs, sport fixtures, and tournaments). Development of sport-specific skills and physical attributes planned for and taught explicitly while cognitive and affective learning took place implicitly.	Physical domain remains key focus for PE (i.e. being active and moving). Other core subjects (e.g. English, Maths, Mandarin) prioritised by school leaders and parents during online learning.	Teachers identified a need for students to be responsible for their own health and physical activity. Teachers were concerned about student emotions (e.g. anxiety, lack of confidence) when returning to sport and physical activity. Enhancing student voice and choice considered by teachers but sustained change was limited due to pre-lockdown approaches (i.e. direct instruction).

Pre-lockdown

The approach to teaching and learning pre-lockdown reflected the traditions of the independent school system in the UK (e.g. House system, inter- and intra-school competitions, sport-as-physical education). An emphasis on sport, sport-skills, and teacher instruction promoted and prioritised the physical domain of learning.

> In this school it's sport, it's sports based basically it's not PE based it's more sports based.
>
> Grace (PE Teacher, 2020.06.15)

However, an acknowledgement that other areas of learning (i.e. affective learning) may take place, albeit implicitly, appeared to be a hopeful rather than deliberate attempt to broaden student learning.

> It's [the affective domain] certainly I think the most implicit thing about teaching, I think it's not something that I would, if I was doing and looking for learning, it's not something that I would explicitly look for. You can definitely tell when teachers have got empathy towards kids. Or you can gauge whether they're having a good day or a bad day. Or whether they love this activity or they don't. Or who they are getting on with, who they're not getting on with. Whether they're finding school difficult. I think it's the experience of the teacher who is able to recognise things like that.
>
> Lucy (PE Teacher, 2020.06.25)

The discourse from school leaders to teachers within the school further endorsed the practices teachers adopted to deliver a sport dominated curriculum. The sport curriculum and its transition into school fixtures was a medium for creating a collective school culture and identity.

> So I'm not saying I completely disagree with it [state what it is]. And I think I've seen benefits here [at school]. I think one big difference is I think here sport is a priority from higher up from seniors from head teachers and deputies to whoever, sport is a thing. And, you know, parents like [their children] to go to a school that has good sports results. It is a selling point of a school, isn't it? I think for the Middle School and for the schools aims and ethos, as such the Middle School PE programme works. It fits in with the school, it's in with the ethos, fits in with the teachers, you know, it works.
>
> Grace (PE Teacher, 2020.06.15)

The ethnic diversity within the school created cultural and linguistic challenges to the delivery of sport and the physical domain. Engaging culturally diverse students in traditional British independent school sports (e.g. football, rugby, netball) was challenging, and often resulted in students who spoke the school's *lingua franca* or had

links to the British culture through family members, often benefitted from the sport curriculum.

> Invasion games is a big [challenge], because of the type of kid that we've got here, the type of environment we're in. We've still got that twinge of traditional British school, of the rugby, the football, the netball and the basketball, it just is a no-go [to change in the curriculum].
>
> Lucy (PE Teacher, 2020.06.25)

> I mean, of course, there's a cultural aspect with sport. Like, up to 10 years ago, there were a lot of Indians that weren't involved in sports because of their hair, you know, especially with girls. It was tradition for them to have a very long plait. A very heavy plait in their hair. So, exercising wasn't great. Also, in certain Chinese groups as well, they don't like their children to be quite dark. So, they couldn't play a lot of outdoor sports. So, they did a lot of indoor sports and they were absolutely amazing at indoor swimming or table tennis, all that type of thing. So, a cultural approach affects the way our children come to PE at school.
>
> Vanessa (PE Teacher, 2020.06.17)

Lockdown

During the government-imposed lockdown, the delivery of the sport curriculum was challenged by the transition to remote online learning. Teachers were forced to deliver their lessons through digital devices which reduced the teaching of sport to isolated, unopposed sport-skills. This prompted discussions around the purpose of teaching sport-skills as it became difficult to converse with students through Zoom[4].

[4] Zoom.us was the preferred audio-visual platform chosen by the school for lesson delivery and live communication between teachers and students.

> Some children just need to stay fit and healthy. They're clearly on the computers at home and watching TV, they need some [physical] activity, just for their general health.
>
> Oliver (Classroom Teacher, 2020.06.18)

Health and physical fitness became inextricably tied throughout the lockdown period. Discourses that promoted physical fitness implied there were benefits affectively. By being physically active and motivated by teacher instructions it was assumed students were engaged in their PE lessons. The priority for PE teachers transitioned from sport to fitness.

> So the main goal [during online learning] was just active, right, are they active? Yeah, it looks like they're active. Right, great, next week let's keep them engaged, let's keep them going, you know. And then we did live stuff as well, that kind of ramps it up to our next level as well of engagement, because we knew how many were actually engaged.
>
> Ryan (PE Teacher, 2020.06.17)

However, it appeared that PE and sport were not prioritised by school leaders or parents during lockdown in comparison to pre-lockdown. Students expressed how the importance of core subject (e.g. English, Maths, Mandarin) lessons were emphasised over taking part in physical activity. The diminished significance of the physical domain appeared to demotivate students when they were eventually prompted to be physically active again.

> I spent more time doing my Math more than PE. My Dad forced me and my brother to go out[side]…because we hadn't been out for like one week already. My Dad said you've got to go out and I didn't like it. It was raining so much. My Dad said to run back home.
>
> (Class 1, Interview 1, Chloe, 2020.06.15)

In the previous quote, Chloe highlighted the dissociation with PE and physical activity that developed in response to focusing on other core subjects (e.g. English, Maths, Mandarin) during online learning. This created a sense of trepidation for teachers who anticipated greeting anxious students who would be physically ill-equipped to resume a normal sport curriculum in their PE lessons.

> I'm sure there were kids who haven't moved for ten weeks, you know. So then we're very conscious when we came back…you have to be wary of these kids, that probably their fitness levels have just deteriorated massively. And along with being anxious and everything else coming back.
>
> Naomi (PE Teacher, 2020.06.24)

Post-lockdown

After returning to school, teachers' immediate thoughts gravitated toward the types of activities that they could deliver in face-to-face lessons. There were reflections on the practices used pre-lockdown that guided these thoughts. However, little attention was given to pedagogical approaches, rather the focus remained on the content of the curriculum.

> I think we've got a really strong sporting ethos here, and we're now trying to bring a little bit of slightly away from the traditional British competitive sport stuff.
>
> Lucy (PE Teacher, 2020.06.25)

School leaders reflected on where tweaks in the PE curriculum could address gaps in learning emphasised by the online learning experience. The physical domain remained

a priority for PE, but there were considerations for affective learning in the form of emotional wellbeing. Emotional wellbeing in this case was how students were feeling in various situations and were they able to regulate any feelings that made them unsettled.

> Even when you look at school curriculum and how much importance there is on emotional wellbeing and those sorts of things, that we've always just taken for granted or bunched in with something else… there's the physical side of it [PE] – and even in some of the emotional wellbeing side of it, with yoga, and the ability to bring in breathing exercises and those sorts of things, that perhaps you wouldn't bother with so much, if you were doing physical lessons. There's got to be some positives there with that, as well.
>
> Ben (Deputy Head Lower School 2020.06.22)

For school leaders and teachers, there appeared to be a transition from the pre-lockdown emphasis on sport and the physical domain towards a broader learning experience. Student wellbeing as an area of interest in PE was absent pre-lockdown but became notable in the data as a post-lockdown consideration. The intention for teachers was to improve student engagement and develop emotional understanding (e.g. when they feel anxious) when participating in their PE lessons.

> [What] I've done with Year 6, where we're doing a five week football programme, and I had a lower ability group with me, and they weren't kicking the ball and they weren't interested in playing…so, we changed it to games of catch, team games, snakes, rolling balls to each other and they all came to me at the end and said, "That was the best PE lesson ever."
>
> Oliver (Classroom and PE Teacher, 2020.06.18)

> Because there is a way to track their physical development, I would also track their emotional-cognitive development. So, there would be a lot of reflective process that I'd put in. I think that's, emotionally as well, maybe they can do an emotional wellbeing check-in before they do a particular

> activity and after the activity then the reflective process comes in, okay. So, “How do you feel right now?” Or, you know, that sort of thing. I think the reflective approach would be a way to go.
>
> Vanessa (PE Teacher, 2020.06.17)

The desire for enhancing student voice and choice within the learning process was evident but with limitations or caveats that meant sustained change in the cultural-discursive arrangement was difficult to achieve. Tournaments (i.e. where students and the school were required to perform) and student ability appeared to dictate how much voice and choice students were afforded.

> I think it's important that the kids take ownership of the decisions they're making. Massively. Like with the football as well I have a little system that I play and I have what's the word I have. If in doubt 'this is where you play the ball'…It's slightly different like tournament football is different as well, I think. You know, obviously, we're in an environment where we need to win. And I remember, we tried to play out the back, Keeper rolling it out to the full backs playing proper football. I said, look lads are we going to carry on, playing this ticky tacky stuff and knocking it about and looking pretty, or do you want me to pick a system. And they were like, 'right, no we want to win’. And the pitch is sticky as well. We went long ball, we didn't play out the back. We played in their half, we had to lump it.
>
> James (PE Teacher, 2020.06.22)

There were differences in how the affective domain was conceptualised and supported pre-lockdown, during lockdown and post-lockdown in the cultural-discursive arrangement. Pre-lockdown teacher practices involved directly instructing students in their sport and sport-skills development during PE lessons. This changed during lockdown when it became challenging to continue teaching sport-skills that engaged students and the focus was on physical activity and movement time. Post-lockdown teachers expressed their desire to improve student voice, choice, and wellbeing.

However, there were residual practices (e.g. direct instruction, sport fixtures, and tournaments) that remained which meant sustained change was difficult to implement.

Social-political

The second arrangement – social-political – highlighted how social hierarchies, norms, and relationships shape practice within a PE context. Teachers shared how their practice was shaped by school leaders, parents, and students, while student learning was affected by their peers, parents, and teachers. School leaders expected students to be physically active. There were assumptions that holistic benefits such as enhanced mental wellbeing and forming relationships would occur from students being physically active. Pre-lockdown sport and sport-skills were the expected norm in PE lessons by parents and school leaders as they sought to imitate the experience of a British independent school. The hierarchical structure of parents and school leaders positioned above teachers and students produced a causal loop whereby school leaders' decisions influenced, and were influenced by, parents. The impact on teachers was an expectation of delivering a sport curriculum, with little input from students.

There was no interference from the local government reported in the data. However, there were inter-school competitions, facilitated by a central organisation, which influenced school leader's decisions to adopt a sport curriculum. Consequently, teachers often used direct instruction as a means of demonstrating their knowledge in developing sport-skills. However, lockdown forced changes to this approach due to

teaching taking place through Zoom. Parents expected engaging, active content for students to follow during online learning that did not require them to be hands on. Post-lockdown, social distancing and wearing masks prevented traditional team sports (e.g. football, rugby, netball) from being played during PE, causing teachers and students to reminisce about pre-lockdown PE. Specifically, students missed the opportunities to interact with their peers, while teachers sought to reignite a focus on sport-skills and inter-school competition. Table 15 provides a summary of the data from the social-political arrangement across three temporal dimensions.

Table 15. Social-political summary across three temporal dimensions.

Pre-lockdown	**Lockdown**	**Post-lockdown**
Sport dominated curriculum. Sport and competition were valued by school leaders and parents. Little restrictions on the school from the Singapore government.	Social distancing meant no formal sport or group activities could take place. Parent expectations changed (i.e. requesting resources that could keep students engaged and physically active) as they were forced to co-educate. Parents co-educating children with teachers supporting online through Zoom.	Government lockdown restrictions for physical activity and sport gradually eased after returning to school. Inter- and intra-school competition continued to be influenced by external organisations (i.e. ACSIS). Students were enthusiastic about returning to play with friends.

Pre-lockdown

The social space pre-lockdown was indicative of the sport and sport-skills within the PE curriculum. It was reflective of the expectations of school leaders and parents, and subsequently teaching approaches to student learning. Sport and sport events (e.g. Sports Days, inter-school tournaments) were influential in teacher practices. Sporting performance was considered a reflection of the overall achievement of the school and individual students. Parents invested in their child's education – creating anxiety and the need to gain value for money (Angus, 2015) – which produced a situation where parents could exert influence over school leaders and teachers in how and what was delivered. Teachers felt this tapped into sport's inherent link with competition, even during intra-school events (i.e. Sports Days).

> Last year, Sports Day, my kids were amazing in class, teamwork, working together, on the day when their parents were there, they would have to win, you have to win.
>
> Hazel (Classroom Teacher, 2020.06.17)

The impact of parents on PE and sport at the school was discussed by teachers in the data. Parental influence became problematic for teachers who were required to meet the expectation that students need to perform at their best and be competitive, while needing to support students who lacked motivation or did not wish to participate in PE lessons.

> You've got some kids who turn up and love it and some kids who hate it and they're bringing some of their prejudices to those…you know, it comes from mum and dad.
>
> Ben (Deputy Head of Lower School, 2020.06.22)

Teachers sought to address this problem by emphasising the joy students would get from taking part in lessons. Fun was conceptualised as a counterweight to competitive sport; a means to engage students in lessons who may not be as enthused about PE.

> My main focus is for kids to have fun, enjoy what they're doing, try and improve, have all aspects of it from competitiveness to, to fun, enjoyment.
>
> Kylie (PE Teacher, 2020.06.19)

However, this seemed to only apply to younger students and created a hierarchy within the PE department. It was perceived there was less pressure on younger students (i.e. 6-7 year olds) to focus on sport performance. It was assumed that younger students would develop a wider range of skills in PE with the attention on sport performance increasing as students got older.

> I think for me within a high school, it also changes as the kids get older, so the lower year group is a lot about fundamental skills as well as sort the pink and fluffy stuff as well, about their social skills, their interaction, their communication, their leadership as well as can they throw a ball from A to B? Can they hop, skip, jump?
>
> Lucy (PE Teacher, 2020.06.25)

The 'pink and fluffy' stuff Lucy referred to related to the affective domain where students could connect and understand each other emotionally through sport and physical activity. It appeared that the opportunities for students to learn affectively was situated in the lower school rather than in middle and high school. Teachers created an unwritten expectation within the department that students in the Lower School would develop a wide range of PE activities, in comparison to their elder peers in High School where the expectation was on enhancing their sport performance. As sport

performance was a priority of the school, this created a hierarchy within the PE department; teachers and students in the High School held a higher status over those in Lower and Middle School.

Lockdown

Students reflected on the connections they had with their peer's pre-lockdown, and the importance this had within a PE lesson. Moving and playing in isolation was not desirable for students. They needed others to interact and associate with to enhance the PE experience.

> T-R: Was there anything you miss in particular [about pre-lockdown PE]?
> Saanvi: I miss everything.
> T-R: You miss everything. Can you try and explain a bit more to me about what's everything? What is it maybe that we can do in the gymnasium that we can't do in the classroom?
> Dan: Being able to run around with friends.
> T-R: Just having opportunity to run?
> Dan: Yeah.
> Saanvi: I miss playing in teams.
> T-R: You miss playing in teams? Oh, so you miss having to work with some friends and like in Rob the Nest maybe to try to steal that treasure and win the game?
> Saanvi: Yes.
> Tijah: I also miss the same as Saanvi.
>
> (Class 2, Interview 2, 2020.06.22)

The expectations of school leaders and parents during lockdown did not appear to change despite the context changing. Parents were expected to continue paying school fees, to support their child's education from home, while many held down a full-

time job. The stress and anxiety of this situation was conveyed to and by school leaders, influencing teacher practices.

> The parents did not like the [online] learning because I think they thought at Year 2 [6-7 year olds] they're able to do a lot independently and they're not. So a lot of the work was hands on. And parents like, I just want a booklet, let them sit down and do it…I think when they're [students are] at home, it's always harder to get them motivated.
>
> Hazel (Classroom Teacher, 2020.06.17)

This situation made the delivery of a sport curriculum problematic for the PE department as a gap opened between expectations and what was possible to deliver in a Zoom meeting. The focus remained on the physical domain. However, there was less emphasis on sport and a greater emphasis on motivating students to move and be physically active.

> Yeah, COVID's been an interesting one, but the main focus for us was to get kids moving. I don't care how you do it but move.
>
> Lucy (PE Teacher, 2020.06.25)

The experience of classroom teachers mirrored this as they were often contacted by parents with requests for additional videos and activities that students could watch and engage with. The expectations of parents changed from performing and learning to keeping children busy and occupied.

> Parents asked for more PE videos. They asked for more music [dance] videos. Because they were like, you can just leave them, they'll watch it. And they know how to do it themselves. But they weren't being watched or anything like that.
>
> Hazel (Classroom Teacher, 2020.06.17)

Despite teachers responding to the challenges and demands of providing physical activity resources, some students reported that PE was not their priority during lockdown, their attention was on other core subjects (i.e. English, Maths, Mandarin).

> I was doing my school work that's why I didn't do a lot of [physical] activities.
>
> Gijs (Class 3, Interview 1, 2020.06.17)

> I didn't do all of them because we had to do other stuff so we couldn't have time to do PE stuff.
>
> Fox (Class 4, Interview 1, 2020.06.24)

Taking part in live or assigned PE tasks was optional for students, which may have contributed to their engagement online. Naomi shared her frustration that PE was given an optional status by school leaders which made it difficult to plan for live and pre-recorded lessons. The overall engagement with and demand for online PE resources varied for students and appeared to not be limited to prioritising other subjects.

> Being optional and not really knowing how effective what we are putting out was…I think the majority [of students] did engage with online PE activities. We were checking how many hits a Firefly[5] page had. So, we did that. And we were hitting over 50 percent on, on most of it.
>
> Naomi (PE Teacher, 2020.06.24)

From a student perspective, the impact of labelling PE as optional during lockdown was summarised by Jane and Adam.

> Jane: I didn't do that much [online learning].

[5] FireFly is a Learning Management System used by members of the school community to post, hold, and gain access to resources and activities.

> Adam: You were supposed to be fun teachers but in lockdown it wasn't fun.
>
> (Class 1, Interview 2, 2020.06.16)

Post-lockdown

The disruption to expectations (i.e. from sport performance to keeping active) during lockdown caused teachers to reflect on pre-lockdown practices and any changes that could occur in a post-lockdown context. The teacher-led, student-compliant practices for sport delivery were reflected upon but were contextualised by the social constraints that directly impacted the type of practices adopted by teachers.

> If we're going to continue doing ACSIS [Athletic Conference of Singapore International Schools] sport seasons, then I don't see us changing, because we cater for their competitive sports…I think the ACSIS season is actually pretty good in terms of offering children tennis, T-ball, athletics, football, rugby, the whole broad spectrum.
>
> Oliver (PE and Classroom Teacher, 2020.06.18)

ACSIS [6] is made up of 32 international schools, split across three seasons of approximately nine weeks. Students aged 7-18 years were able to take part in 16 different sports (e.g. football, netball, gymnastics). The school in this study was considered a significant member of ACSIS due to its size compared to other schools. The influence of ACSIS on the school was perpetual. The interdependence between schools to organise fixtures and tournaments was at odds with the expectation from

[6] The Athletic Conference of Singapore International Schools was a self-regulating cooperative set up by international schools in Singapore. Schools could only gain access if they paid an annual subscription fee and contributed to the organization by entering competitions and attending regular AGMs.

school leaders and parents that required the school to out-perform their competitors. This informed PE content and delivery as teachers organised the curriculum to meet the demands of competing in each of these seasons across the academic year.

The role of sport to enhance social relations and/or hierarchy was discussed as teachers reflected of their own experiences in PE and sport. The association between playing sport and the social opportunities this may create beyond school was highlighted. Sport was perceived to create or further enhance these opportunities for students in adulthood.

> I think get down a Social Club and you know, it provides opportunities to make friends and, and keep fit, good, healthy body, healthy mind. And you have to basically, that's what I'd like, that's what I'd like to install in every kid I have contact with or our PE team have contact with. They come away from this school life, and say actually I got inspired to play sports all day and keep active, keep healthy and have a social life on the back of sport. Obviously, I've had a good opportunity, my cricket and rugby where I've travelled the world and made friends and it's made life easier for me.
>
> James (PE Teacher, 2020.06.22)

Students reflected on modified games and activities that encouraged them to cooperate, compete, and connect with their peers. The type of activities they preferred focused on a range of learning outcomes that went beyond the expectation of sport performance. Students appeared to find joy in participating with and against others, including teachers, rather than viewing all individuals as direct competitors.

> Jane: King Ball was one of my favourite lessons. I found it really easy and fun. We got to play with the Laoshi's [Mandarin teacher] sometimes.
> Ana: Oh yeah, that was fun.
> (Class 1, Interview 2, 2020.06.16)

> Claire: I'd really like to try that Chocolate River game again.
> T-R: Why would you do that?
> Claire: It's really fun.
> T-R: Well, what makes it fun?
> Harry: With the balances, you and your team have to keep your balance. And you have to take one [spot] out and pass it to the person at the front [to keep moving forwards].
>
> (Class 2, Interview 1, 2020.06.19)

Three temporal dimensions (i.e. pre-lockdown, during lockdown, post-lockdown) demonstrated how the social-political arrangement produced hierarchies that impacted teachers and students PE experiences. The competitive environment between schools (i.e. ACSIS) created parent and school leader expectations of improving individual student and whole school performance. Intra- and inter-school competition was a core component of the school, which influenced teacher practices (e.g. direct instruction) and reinforced a hierarchy within the school that younger students were not capable of performing in the same way. Students reflected on their lockdown experiences by highlighting their desire to participate with others during post-lockdown PE rather than to merely compete. This appeared to go beyond sport and the physical domain to facilitate affective, cognitive, and social domains of learning.

Material-economic

The final arrangement – material-economic – focused on what teachers and students do in the physical spaces, the time spent in PE, and the opportunities provided for students by teachers. Pre-lockdown PE spaces were predominantly sport-specific and

required teachers to utilise them according to the sport. Spaces afforded to teachers and students exceeded that of typical primary schools in Singapore and the UK. There were opportunities to broaden the curriculum and modify games in these spaces to enhance student engagement. As an educational space, the sports hall undertook a different meaning for students who viewed it as a place to move and compete with others. The impact of lockdown meant that students could no longer use these spaces and teachers were required to replicate the sport-skills inside a bedroom, living room or garden with limited access to specialised equipment. However, students were creative with where they could be physically active. There was a gradual return to existing spaces post-lockdown, with students transitioning from their home environment to the classroom and eventually back into sport-specific spaces, albeit with limitations on group sizes and the use of equipment (e.g. sterilisation after use). Students and teachers expressed excitement at the prospect of identifying creative ways to use existing spaces and equipment. Table 16 provides a summary of the data from the material-economic arrangement across three temporal dimensions.

Table 16. Material-economic summary across three temporal dimensions.

Pre-lockdown	**Lockdown**	**Post-lockdown**
PE space purpose built for sport (e.g. sports hall with netball markings and posts). Students shared their enthusiasm for using specialist equipment (i.e. gymnastics beam).	PE taking place at home, in a garden, or a communal area. PE teachers taught through live and pre-recorded videos. Students accessed other resources online (e.g. PE with Joe).	Continuing government-imposed restrictions (e.g. groups of 5, low-medium intensity) meant that sport and the physical domain could not be prioritised initially. Students shared opportunities to adapt sport spaces for modified games and activities in PE.

Pre-lockdown

The physical spaces (i.e. sports hall) available in the school were purpose built for sport participation and competition. Spaces were designed to support the development of sports that were represented in ACSIS. Line markings were used to divide spaces, each line colour representative of a different sport (e.g. back lines for basketball, red lines for netball). The football field had an artificial turf surface to cater for year-round participation. A mixture of indoor and outdoor space was intended to mitigate the climate conditions of Singapore (i.e. hot and wet seasons). Playground spaces – designed for physical activity during recess periods – were irregular in size and elevation and were fitted with multi-purpose equipment (i.e. climbing frames). In contrast, PE facilities were rectangular, flat and were fitted with sport-specific equipment (e.g. balls, goals, posts).

In addition, there was a dedicated gymnastics space equipped with high and low beams, parallel bars, uneven bars, vaults, springboards, trampettes, crash mats and floor mats. This meant that students could take part in gymnastics[7] during their 60 minutes of PE in addition to enrolling in after school and weekend activities too. A student who aspired to train and compete in a variety of sports had the access to space, time, and equipment to do so at school.

[7] Gymnastics is conceptualised in this study as a competitive sport, rather than a diverse and multi-faceted physical activity (e.g. Kirk, 2010).

Younger students (i.e. 6-7 years) found sport-specific equipment to be intriguing. For example, the specialised gymnastics equipment was appealing due to its unique appearance and the challenge it presented.

> Chloe: I kind of like gymnastics.
> T-R: Yeah. Why? Why was the fun?
> Chloe: Because we get to use the bars and the beam and all the equipment inside the gym. I also liked the rock climbing. It's hard but we don't do it that much.
>
> (Class 1, Interview 1, 2020.06.15)

> Rian: What about the gymnastics.
> T-R: We did some gymnastics. Yeah.
> Dai: We went on the bars.
> Reiko: Jump on the trampoline.
>
> (Class 3, Interview 2, 2020.06.18)

Students embraced the large, physical spaces afforded to them and recalled the enjoyment they experienced in these spaces through movement and play.

> Claire: I kind of like doing PE in the big gym[nasium] because then we could be together and play together.
> Harry: There's a bigger space to play together. I think we can do a bit more learning in the basement gym[nasium].
>
> (Class 2, Interview 1, 2020.06.19)

Younger students used indoor court spaces – referred to as 'the basement gym' by students – to participate in modified games. Modified games often shared similarities with the major sports of the school to adhere to the expectations of school leaders and parents (e.g. two teams, use of sport-skills, tactical development). The games offered a broader range of learning opportunities in comparison to their peers in Middle and

High School who were preparing for ACSIS competitions. Popular games such as King Ball were played in adjoining basketball courts with up to 44 students. The size of the space (i.e. two basketball courts) ensured many students could comfortably and safely participate in these games together. Modified games challenged students in a range of learning domains (i.e. physically, cognitively, socially, and affectively) by taking the emphasis away from sport performance to develop teamwork, emotional regulation and decision-making skills with the aim of fostering a sense of joy for physical activity.

In the example below, Ana explained her frustration when placed in a pressurised situation of making a successful throw to release her teammates. She clarified that the frustration did not mean the game was a less enjoyable experience.

> Ana: There's things I didn't like about King Ball. Like you throw the ball and the player misses the ball, it's very frustrating. Because you're trying to get them out. If you're the only person you have to get them out safely.
> T-R: So you found that frustrating? Because if you miss that ball, 'I was like, so close to getting it.' But did that, would that stop you from playing the game?
> Ana: No.
> T-R: You would still want to play the game? Even though it's frustrating.
> Ana: Yeah, it was just difficult.
>
> (Class 1, Interview 2, 2020.06.16)

Lockdown

During lockdown, the use of school space and equipment, particularly the gymnastics equipment, was restricted. During the government-imposed lockdown, students were

often confined to their apartment or house with little access to the specialist sport equipment or the space in which to practise sport-skills.

> I like football. But when we did football in the [online] lessons when we were in lockdown, I'm usually not allowed to play [when] we're in the flat and there's people downstairs, so we're not allowed to play around the house. In the classroom there's not much room to do the [physical] activities.
>
> Chloe (Class 1, Interview 1, 2020.06.15)

Teacher practices pre-lockdown conflicted with lockdown restrictions and the need for 'sports' equipment and space to meet expectations: "not using equipment goes against everything that sport represents" (Oliver, PE and Classroom Teacher, 2020.06.18). Despite students and teachers having devices that enabled them to communicate, it was the inability to 'do' PE that challenged and frustrated teachers who were unable to replicate traditional sport and sport-skills practices.

To mitigate the PE void created by lockdown, students explored other avenues to engage in physical activity. For example, students looked beyond the daily 30-minute lessons provided by teachers, choosing to engage with trending celebrities and workouts.

> Claire: I also did 'PE with Joe'.
> T-R: OK, right. How did you find that?
> Claire: It was kind of tricky.
> T-R: Did you find it fun?
> Claire: Yeah it was fun.
> T-R: Was it something you wanted to keep doing?
> Claire: Yeah, and then, Joe said you had to spot some things that were different from the other time. It was like Spot the Difference.
>
> (Class 2, Interview 1, 2020.06.19)

Students utilised other spaces and resources for being physically active during lockdown that took them away from the home and online environment. Jane decided to go ‘walking’ (Class 1, Interview 2, 2020.06.16), Rian ‘went jogging’ (Class 3, Interview 2, 2020.06.18), and Sora went ‘riding on the bike’ (Class 3, Interview 1, 2020.06.17). However, due to the affluent environment in which the students lived, it was common for them to have access to other resources that meant they had several options to facilitate physical activity. These options were not common for many children in Singapore and the UK. For example, Reiko explained how she used her ‘swimming pool and trampoline at home’ (Class 3, Interview 2, 2020.06.18) to remain physically active during lockdown. Cheng added to this saying she ‘liked to be in a pool all day’ (Class4, Interview 2, 2020.06.25). The access to a plethora of spaces and resources meant students had choice in the type of physical activity they engaged with and were not limited to online tasks set by teachers.

Post-lockdown

Returning to school post-lockdown presented further challenges for teachers and students who were keen to return to participate in sports but were initially restricted in the space (classrooms), time (20-30 minutes), and equipment (sterilisation after use) during PE lessons. However, some teachers found comfort when comparing their lockdown and post-lockdown situations.

> Interesting having no equipment. And I think the children are generally enjoying it. It's now still novel. You know, still novel, they're back at school

> they're having PE of some form, it's only 20 minutes. They haven't really got time to get bored or lose interest. I mean, they absolutely miss the competitive ones, miss having a ball. And, you know, I think being a game or something slightly more sport based.
>
> Grace (PE Teacher, 2020.06.15)

Students reflected on the activities they enjoyed playing pre-lockdown and related whether they could do these activities again given the initial restrictions that were put in place.

> Sora: I like that we can play tag and Capture the Flags.
> T-R: Capture the flag?
> Sora: Yeah, inside of class there's not much space and you can't do tag because of the Coronavirus [restrictions].
>
> (Class 3, Interview 1, 2020.06.17)

Within a month of returning to school, restrictions eased that allowed students to access the physical spaces dedicated to PE and sport at the school. However, use of equipment, group sizes (up to 5 students), and intensity of the activity (medium-low) remained in place for the short-term. Students considered the types of activities they liked to take part in during this period. With the physical domain constrained, students referred to activities that provided an opportunity to develop other areas of learning (e.g. the affective domain). For example, the discussion below is about a game that prioritises problem solving (cognitive), collaboration (social), and dealing with setbacks (affective).

> Claire: I'd really like to try that Chocolate River game again.
> T-R: Why would you do that? You only need one spot each.
> Claire: It's really fun.
> T-R: What makes it fun? Can you describe it a bit more for me?
> Harry: With the balances, you have to keep your balance.
> T-R: So you have to work hard to keep your balance.

> Harry: And you have to take one out and pass it to the person at the front.
> T-R: Do you not get upset, though, if you fall in or someone in your team falls in. Does it not make you frustrated or...
> Claire: We can still try our hardest to do it again.
>
> (Class 2, Interview 1, 2020.06.19)

Overall, students appeared to be excited about returning to school post-lockdown. This contrasted with a sense of apprehension from teachers. Students shared that they valued the opportunity to connect with teachers and peers again, and to utilise the spaces and equipment for movement and play that had been denied during lockdown.

> Jane: Online it was basically like harder to understand because we were online with each other, and we had to watch a video it gets a little complicated if you don't get it.
> T-R: Okay. So how would us doing PE in the gymnasium have helped with that?
> Jane: You actually get to ask questions with the person who's explaining it to you.
> Ana: There's another thing about the difference about the Zoom and PE and real-life PE.
> T-R: What's that?
> Ana: For the Zoom PE it always glitches.
> T-R: So is that a good thing or a bad thing?
> Ana: It's a bad thing. But when you actually see the person in real life it's good because they won't glitch.
>
> (Class 1, Interview 2, 2020.06.16)

The impact of a government-imposed lockdown during COVID and the competitive environment in which the school operated impacted the use of dedicated sport spaces and equipment in the material-economic arrangement. The physical space, equipment and time afforded to teachers and students in PE lessons pre-lockdown facilitated the focus on the physical domain. This left little opportunity to cultivate a broader curriculum for students that incorporated affective, cognitive, and social domains.

Lockdown constrained teachers in their capacity to 'do' their job of developing sport and sport-skills. Instead, students used the resources they had access to in their home environment. Post-lockdown, students appeared enthused about using designated sport spaces in flexible ways, using PE resources that allowed them to participate in a range of activities during lessons that were not confined to the physical domain.

Chapter Summary

This chapter has identified the range of facilitators and barriers that support the affective domain in PE (RQ3; see p.3) generated from teacher and student interviews. Across the data set, facilitators included: modified games in the curriculum, and identifying the importance of wellbeing. Overall, priority for the physical domain was the main barrier to supporting the affective domain. Other barriers included: inter- and intra-sport competitions, the use of sport-specific spaces and equipment, school leader and parent prioritisation of sport.

Analysing the data through a *practice architectures* lens provided insight into three distinct arrangements (i.e. cultural-discursive, social-political, and material-economic) across three temporal dimensions (i.e. pre-lockdown, lockdown, post-lockdown), and these provided a way to unpack the facilitators and barriers. For example, there was a renewed language used to describe PE that emphasised the importance of wellbeing post-lockdown (cultural-discursive). However, despite importance placed on the affective domain, sport and inter- and intra-school competitions were prioritised in PE

that were influenced by external organisations (i.e. ACSIS; social-political) and the sport-specific spaces and equipment to be used for PE (material-economic). Hence, the physical domain of learning remained the key priority for PE lessons.

Kemmis (2021) explained that the three arrangements of practice architectures *hang together*, and that all three exist interdependently. For example, the use of specialist sport spaces and equipment (material-economic) fed into the cultural importance placed on sport (cultural-discursive) and the school leaders and parents' prioritisation of sport (social-political). The alignment of these three arrangements did not exist for the affective domain in any of the temporal dimensions. Instead, they existed on a singular basis, which meant, and according to the theory of *practice architectures*, working conditions did not exist to support the affective domain. For example, students shared how the affective domain could thrive when they participated in modified games that downplayed the significance of the physical domain. Such as when they talked about how modified games were exciting and enjoyable to participate in, despite moments where they may be frustrated by setbacks (cultural-discursive). Teachers also prioritised wellbeing post lockdown (cultural-discursive). However, the social structures – such as the curriculum and pressure from external organisations – (i.e. social-political) rarely supported the affective domain, and instead continued to encourage sport and physical performance. Equally, the physical space (i.e., material-economic) was not adapted to support the affective domain. PE was practiced in the same space and in the same way, albeit within smaller groups.

The three arrangements of practice architecture theory were valuable for identifying the facilitators and barriers of how the affective domain is supported in PE. This theory has provided new insights to explain why observing the affective domain was particularly challenging and why the affective domain is rarely practised within a PE context (see Chapter 2). The significance of these findings will be further explored in the next chapter when the implications of this research are considered.

CHAPTER 6: DISCUSSION

The purpose of this chapter is to evaluate and interpret the findings of the study, to draw inferences and conclusions from it, and to demonstrate its contributions to the field. To begin, Table 17 illustrates the originality, significance, and rigour of the research. It provides a summary of the novel and/or confirmatory insights related to the three research questions (see p.3). Following this, three distinct sections will expand on these findings and their respective interpretations. First, a reflective overview of the findings – *what happened* – in relation to the three research questions of this study will be shared to demonstrate the originality of this research. Second, the implications of this research – *so what* – will be discussed to demonstrate the significance of the PhD thesis. Third, the limitations of this study and the directions of future research – *what now* – will be proposed. By adopting this structure, I intend to set out the concluding arguments of this thesis in a coherent manner, indicating the contributions of the findings to existing literature.

Table 17. Novel contributions of the study.

• In-depth and observational data on the affective domain, through the application of an evidence-based and novel methodological technique (i.e. Practical Epistemological Analysis) • Through the PEA technique, our understanding of how the affective domain can be defined and conceptualised has been advanced. • Evidence on different types of pedagogical contexts that influence the affective domain, inclusive of the contrition of teacher-led approaches and modified games. • Key beliefs of teachers and leaders that facilitate the development of the affective domain in PE. For example, teachers' perceived need to support

student wellbeing, establishing strong relationships between teachers and students.
- Key contextual barriers, that limit opportunities for teachers to support the development of affective learning in PE. For example, the dominance of the physical domain, inter- and intra-sport competitions, sport-specific spaces and equipment, and school leaders and parent prioritisation of sport.

What Happened?

Chapter 2 highlighted gaps in the evidence-base relating to the affective domain, in the context of the growing prevalence of mental ill-health and physical inactivity in children and young people. The deliberate and explicit nature of the affective domain in PE has been advocated as a means of addressing these concerns (Kirk, 2023). Since the 1960's, little appears to have changed in the way PE is planned for and delivered in various school contexts (Beni et al., 2023), where affect is considered a hoped-for, by-product of PE practice (Kirk, 2023). In turn, in the last five or more years there has been a sense of urgency to understand the affective domain in PE, and mainly in the context of mental health concerns (Ferreira et al., 2023; Kirk, 2023; Teraoka et al., 2023). The purpose of engaging in this research, as outlined in Chapter 2, was to examine and critique the affective domain using novel methods and propose new pathways forward for the affective domain and mental health in PE.

The onset of mental health disorders (e.g. anxiety and depression) among young people has been reported from the age of 11 years (Walker et al., 2023). Other research has suggested that young people from this age begin to disengage with PE, health and physical activity due to low self-efficacy, low perceived competence,

challenges with self-concept, and/or a lack of motivation (Jachyra, 2016). Given the bi-directional relationship between mental health and physical activity (Zimmermann-Sloutskis et al., 2010), it seems logical to address these two challenges concurrently (Kirk, 2023). Furthermore, the importance of addressing mental health and physical activity in pre-primary and primary education has been emphasised (WHO, 2018). A focus on primary education, contextualises approaches to mental health and sedentary behaviour in prevention rather than intervention domains, and this is a fruitful strategy for reducing the prevalence of health concerns at a population level. This study was undertaken with children aged 6-7, and therefore this thesis provides important contributions to a growing evidence-based on mental health and physical activity prevention research in primary education settings.

A challenge in assessing and measuring a child's mental health status lies in their ability to read and comprehend the questions and terminology of the psychometric tests often used to gain insight and data. For example, gaining ethical approval from the children participating in this study required the parents of each child and I to separately explain the study to the children before they provided their assent to be included in the study. In addition, there is a dearth of evidence concerning mental health and wellbeing in international education. Despite a wealth of policies and training opportunities that raise awareness for teachers and school leaders in international schools, the responsibility of receiving and responding to mental health disorders often lies with school counsellors (CIS, 2020). For school policies that seek to support a mental health and wellbeing agenda, policy needs to be interpreted and shaped by teachers to fit their unique context (MacLean et al., 2015). A growing

collection of global resources are being produced, distributed, and shared that aim to support teachers through cross-curricula subjects (e.g. Breathe-Edu, 2024; Systems Awareness, 2024).

The limitations of understanding mental health and accessing relevant resources in international education presented an opportunity in this research project to examine the role of PE. I set out to gain a unique and novel insight into conceptualising and observing the affective domain in PE, moving beyond psychometric measures (e.g. of motivation), which could contribute to mental health and wellbeing discourses in international education and whole school approaches.

Establishing mental health as a focus of this study meant it was vital to conceptualise health in a broader sense. This is where notions of health-as-salutogenic were significant from a socio-critical standpoint. Drawing on recent literature, primarily from Sweden and Australia (McCuaig and Quennerstedt, 2018; Lynch, 2019; Maivorsdotter and Andersson, 2020; Mittelmark et al., 2017; Quennerstedt, 2018), a salutogenic conception of health adopted a multi-dimensional perspective on healthy living, that is continuously evolving and dynamic. In this sense, a salutogenic perspective also had connotations with Dewey's views on learning (i.e. continually transacting with the world; Ward and Quennerstedt, 2015), which informed and framed the analysis of data addressing research questions one and two. The following sections go into further depth about the originality of the findings in relation to the research questions.

Observing Affective Learning

Addressing the first research question (RQ1; see p.3) in Chapter 4, the Practical Epistemological Analysis (PEA) technique made it possible to observe indicators of affective learning by zooming in and out of the action and interplay taking place in and across lessons. In comparison to other studies that have focused on interactions between teacher and students (Ward and Quennerstedt, 2015) and interactions between students (Barker and Quennerstedt, 2017), the data provided original insights for three reasons: 1) my role as a teacher-researcher, 2) the interactions that took place between the students and me, and 3) the number of students (n=176) that were video recorded. Through these interactions, a range of affective indicators were frequently identified (e.g. joy, confidence, frustration) that corresponded with existing literature using similar observation techniques (e.g. Barker et al., 2019; Smee et al., 2021). However, affective indicators such as *annoyance* and *disappointment* suggested that affective learning was complex and did not occur in a linear trajectory, which aligns with the underpinning theoretical perspectives of Dewey and salutogenesis.

The PEA technique, in contrast to systematic observation tools used in PE and sport contexts (Wright and Irwin, 2018), was comparatively straightforward to apply due to the five concepts that informed the technique (i.e. purpose, gaps, stand fast, relations, encounters). PEA emerged out of a critique of adopting systematic observations in educational research that often focuses on behaviours from a pre-determined criteria (Wickman and Östman, 2002a), and this aligned with my intention to delve deeper into the learning process and identify affective indicators. My pilot study involved attempting

to systematically observe components of the affective domain, but the descriptive approach did not allow for the affective learning process to be identified, only the behaviour of emotion that corresponded with the pre-set criteria (e.g. self-control, rage, empathy). What I took from this experience was the need for a different analytical approach – PEA – to engage with the video recorded data in a way that could allow me and other researchers and practitioners seeking to gain an in-depth understanding of the complex process of affective learning in PE.

The establishment of analytical questions using the five PEA concepts, through discussions with a critical friend, was crucial in the PEA process. These framed my analysis during familiarisation and identification of key moments in the data. They were regularly referred to, providing guidance, and supported the views of Smith and McGannon (2018) by enhancing rigour during the analytical process. By using the analytical questions (see Table 6), three indeterminate situations (*Rules*, *Task*, *Relationship*) resulted from the embodied actions that participants had not made sense of yet (Garrison, 2010; Quennerstedt, 2019; Shilling, 2018). For example, students who acted to break the rules of a game created reactions from me (teacher-researcher) and/or their peers. This dynamic interplay where all individuals are actively engaged with their environment, being shaped and reshaped by the interplay (Safron, 2019), created situations whereby affective indicators were observable.

Across all three indeterminate situations, the importance of winning was a common feature. Visible through the *encounters* between the individual and their environment (i.e. interpersonal, institutional, physical world), students use of language and gestures

demonstrated how competitive activities were within PE lessons. In addition, displays of physical prowess exasperated already highly competitive situations which often led to emotionally unsafe and unfavourable affective experiences. Consequently, as the teacher-researcher I exerted significant influence in the mediation of conflict between individuals and/or groups. This made the role of teacher challenging and complicated in these learning situations as students needed the *relations* with me to fill lingering *gaps* rather than creating *relations* with each other.

Pedagogical Processes of Affective Learning

Addressing the second research question (see p.3), in Chapter 4 I used the PEA technique to identify pedagogical processes that influence affective learning (i.e. interpersonal, institutional, physical world). A range of pedagogical approaches have been proposed that could support the deliberate teaching of affective learning in PE (Casey and Kirk, 2021b; Kirk, 2023; Lamb et al., 2021). These approaches have been clustered together under the umbrella term *pedagogies of affect* (Ferreira et al., 2023). This study did not contribute to the development of pedagogies of affect by implementing a pedagogical approach with the intention of gauging its effectiveness. Others have started this process of analysing the effectiveness of various instructional designs on the affective domain (Casey and Fernandez-Rio, 2019; Dudley et al., 2022; Evangelio et al., 2018). The contribution of this study is to take a step back and understand what the pedagogical features of affective learning are in context.

The micro-interactions that occurred during video recorded PE lessons and the stimulated recall interviews provided unique interpretations of those interactions between the students and I (teacher-researcher). The PEA technique allowed me to zoom in on the learning process to unpack and examine the micro-interactions occurring in context (Barker et al., 2019, 2015b). Illustrations in Chapter 4 were often less than 15 seconds in length in the video recorded lessons. The observation of *encounters* through interpersonal (i.e. with peers), institutional (i.e. with teachers), and physical world (i.e. sports hall) micro-interactions meant it was possible to demonstrate how affective indicators were created by, or the creator of, situations that led to or away from affective *gaps*. For example, the physical world presented unique features (i.e. large open space, bibs, balls, hoops) that did not form part of their typical learning materials and environment. Although the space provided students with the opportunity to express themselves physically and emotionally, these features created challenges for students (i.e. how to roll a hoop), and paradoxes (i.e. following the rules).

Methodologically the consequences of these *encounters* that led towards or away from affective *gaps* support the argument that illustrating the complex micro-interactions that typically occur in PE lessons (Andersson and Garrison, 2016; Smee et al., 2021) reflect the dynamic and complex pedagogical process of the affective domain. That is the process of learning in the affective domain was complicated as students often went backwards before they progressed. In the context of this study, it has been demonstrated that many of the micro-interactions involve students and/or teachers' feelings, therefore the affective domain could be considered ubiquitous in the learning process and observation in the micro-interactions that take place.

If the affective domain is ubiquitous in PE, the need for pedagogies of affect or their application may need further development and consideration. In this study, direct instruction was the typical mode for communicating in the lesson, with little questioning or guidance. Similarly, feedback was often direct, and teacher initiated. Direct instruction is part of a spectrum of instructional approaches that is necessary for a PE teacher to know and understand if they are to be effective (Herold, 2011). Direct instruction was considered an effective way to deliver key information for students. Therefore, the idea of pedagogies of affect – grounded in facilitation and offering students autonomy and choice (Teraoka and Kirk, 2022) – appear to have been developed before a deeper understanding of the micro-interactions in PE has taken place.

Similar to Goodyear and Dudley (2015), there is an observed critique on the narrative that student-centred learning is best, and also conceptualisations of student-centred learning in practice. In the context of effects on learning, research guided by meta-analysis of teacher interactions in education (more broadly) suggests that direct instruction and teacher led approaches are effective in the right context and at the right time (see Hattie, 2009). Hence, given that the affective domain has had limited definition and conceptualisation in PE, it seems that research has been premature to assume student-centred learning will be effective. In agreement with Goodyear and Dudley (2015), and based on the findings from this research, a mix of teacher-centred and student-centred approaches could be considered optimal for the affective domain. This approach is more in-tune with arguments put forward for teachers to

conceptualise their role as activators of learning. Hattie (2009) referred to the role of teacher-as-activator as deliberate change agents and directors of learning. According to Hattie's meta-analysis on visible learning, activators are key agents in the pedagogical intervention, and use strategies such as feedback, goal setting, and reciprocal teaching. Therefore, at this stage in the evidence-base a suggestion could be to consider pedagogies to promote affective learning in the context of teachers-as-activators of learning.

Facilitators and Barriers of the Affective Learning

Addressing the third research question (see p.3), a range of facilitators and barriers that support the affective domain in PE were identified. Modified games and recognising the importance of wellbeing in the curriculum were key facilitators of the affective domain. In contrast, the physical domain, inter- and intra-sport competitions, sport-specific spaces and equipment, school leaders and parent prioritisation of sport acted as barriers to the affective domain in PE. Three distinct arrangements across three temporal dimensions provided a way to unpack these facilitators and barriers and understand how they hang together through the lens of practice architectures.

Adopting the theory of practice architectures was in part due to the study being significantly impacted by the COVID-19 global pandemic in two ways. Firstly, the study design changed to include interview questions in response to the different stages of COVID (i.e. pre-lockdown, during lockdown, post-lockdown). This study was not

unique in needing to adapt, as other studies faced similar challenges at the time due to the possibility of lockdowns and uncertainties around participant recruitment (Fairbrother et al., 2022). However, the data collection had already begun (i.e. video recordings and SRIs), which meant it was necessary to act quickly to collect additional, appropriate data. Secondly, the data was initially analysed through a thematic approach, with themes related to physical, socio-cultural, relational, and personal factors being established. In response to the challenges of synthesising and integrating the findings I encountered during the writing stage (step 6; Braun et al., 2017), I drew on the theory of practice architectures to conceptualise these areas.

From a pragmatic standpoint, new opportunities arose because of these changes in data collection. For example, student and teacher interviews provided additional voices beyond that of my own as the teacher-researcher to broaden the data set and understand different perspectives. When analysed through the lens of practice architectures, the data provided original insights to explain why observing the affective domain was particularly challenging (i.e. lack of understanding of the affective domain), and why the affective domain is rarely practised within a PE context (i.e. the physical domain is prioritised). The impact of COVID was that teachers placed additional importance on student wellbeing in a post-lockdown environment (i.e. cultural-discursive). However, the importance placed on inter- and intra-sport competitions, influenced by school leaders, parents, and external organisations, meant it was a return to 'business as usual' with sport and the physical domain prioritised. Consequently, an area that this study did not uncover was the optimal contexts through which the affective domain can thrive.

So What?

The significance and implications of my findings – *so what* – lie in their confirmation of previous findings, the extension of these discussions, and the contribution of new insights and applications. I have attempted to demonstrate that PE can contribute positively to the contemporary issues facing young people (i.e. mental health crisis), despite the affective domain being complex and dynamic. Specifically, this section will go into further detail about the implications of the findings related to three distinct yet interconnected areas: 1) schools and teachers, 2) organisations in the public and private sector offering teacher education, and 3) future research.

The implications for schools and teachers operating in international environments relate to the development of curricula through policy and changing practice. The development of PE in pre-primary and primary curricula to include the affective domain needs to occur through deliberate professional development and teacher education (Petrie and Clarkin-Phillips, 2018). As Kirk (2010) has referred to, more of the same could consign PE to a subsidiary role in the struggle against mental health and wellbeing issues affecting young people. There are opportunities highlighted in the findings of this study to implement changes or improvements regarding policy (i.e. school leaders) and practice (i.e. teachers). For example, understanding what affective indicators are frequently observed (e.g. confidence, frustration) amongst 6- and 7-year-olds could inform teacher practice beyond a PE context to other subject areas in the

school. Subsequently, three immediately actionable recommendations are proposed: 1) the deliberate integration of affective learning in PE curriculum (e.g. peer check-ins), 2) professional development and teacher education (e.g. research-informed tools and pedagogies that support affective learning in PE), and 3) future research opportunities using a robust methodological tool (e.g. the practical epistemological analysis technique for analysing learning in PE).

Student actions and reactions in PE lessons influenced how their peers and I reacted toward them. For example, students who broke rules within PE games often received negative responses from me and created conflict with their peers. Indicators of affect, such as *frustration*, provided insight into the direction of learning. Creating awareness of these thoughts and feelings among students and teachers could provide meaning and reflective moments, that Dewey would argue are essential for learning (Sund and Öhman, 2014). Students would need to develop the ability to recognise and evaluate their feelings and emotions in PE if they are to understand the impact of their actions and reactions. In Chapter 5, check-ins were proposed by teachers as a quick and effective method for understanding how students are feeling, often conducted at the beginning or end of the lesson. Integrating affective learning into the PE curriculum without significantly impacting the focus on learning physically. Adopting techniques that raise self-awareness such as check-ins could support the early detection of mental health issues (e.g. anxiety, depression) by monitoring mood and behaviour changes. Discussing feelings and emotions, and subsequently mental health through check-ins could also normalise discussions and stigmas surrounding mental ill-health (Patton et al., 2016).

The purpose of raising awareness through check-ins is not to ensure every feeling is positive. In Chapter 4, it was reported that affective learning did not progress in a linear manner, with students sometimes going backwards (i.e. feeling frustrated) before they then went forwards (i.e. feeling delighted). For teachers to understand this process – that feelings and emotions in a PE context are multifaceted – their interactions with students should create psychologically safe and supportive learning environments that facilitate and encourage resilience and perseverance. It was highlighted in Chapter 5 that teachers who establish positive, authentic relationships with students can support the promotion of health and wellbeing. However, initial teacher education and continued professional development appears problematic for holistic development in PE as practice is often focused on the physical domain (Varea et al., 2020).

The implications for organisations relate to the initial teacher education and continued professional development of teachers, enabling existing and future teachers to confront mental health and wellbeing concerns confidently and purposefully through physical activity and movement, whether in PE-specific or across whole school approaches. In the context of this study, the school is considered a *through school*. That is a child can begin their formal education at the age of 2 years and could feasibly continue at the same school until the age of 18 years. This is a common structure across international schools in Asia and the Middle East due to the transient nature of business, education, and family life. This makes a whole school approach to preventing and addressing mental health concerns simpler to coordinate, positioning subjects such as PE at the centre of any intervention or educational approach. However, state

schools and private schools located within many countries (e.g. UK, Australia, USA) will often have separate schools that act independently (e.g. pre-school, 2-5 years; primary school, 5-11 years; secondary school, 11-18 years). Transition from primary to secondary school is associated with a reduction in mental health and wellbeing (Jerrim, 2022), and the emergence of vulnerabilities connected with increases in mental health conditions (Moore et al., 2020). Therefore, engaging children in pre-primary and primary PE could potentially reinforce and sustain positive mental health.

Practically, the findings of this study inform the process of professional development and teacher education that can facilitate changing teacher practices related to affective learning. Pedagogies of affect have been proposed as legitimate instructional approaches that are student-centred, promote student agency and enhance student motivation to learn (Kirk, 2023; Teraoka et al., 2023). Despite this, improvements in motivation do not always result in learning gains (Goodyear and Dudley, 2015). Hattie's (2009) teacher as an activator of learning connects with the direct instruction observed in this study and contributes to other literature (i.e. Dudley et al., 2022) that proposed a range of instructional approaches can positively impact affective learning. The significance of this to organisations delivering professional development is that teacher educators can incorporate a variety of instructional models that positively and deliberately impact affective learning in PE.

Theoretically, the findings of this study inform new perspectives and approaches for understanding ad interpreting the affective domain in a PE context. For example, Dewey's transactional learning theory would consider the affective learning process to

involve continuity and change in relation to the environment (Andersson and Östman, 2015; Östman and Öhman, 2022; Quennerstedt et al., 2011). Similarly, a salutogenic perspective captures the process of individuals going backwards and forwards as their *ends-in-view* for health and/or affective learning continually shifts and re-aligns. Due to the complexity of the affective domain observed in this study, multiple theoretical perspectives were necessary (Wolcott, 2002), as there is not one theory that fully encapsulates the affective domain.

To emphasise the multiple theoretical point further, the proposed approach of activating learning that acknowledges variation in pedagogy (i.e. teacher-led verses student-centred) is aligned with Hattie's (2009) visible learning. Hattie's (2009) description that effective teachers are activators of learning who take on the role of deliberate change agents, and who are not positioned as passive. In contrast, Dewey emphasised the need for passivity to gain meaning and experience through transactions with an individuals' environment (Rømer, 2019). The environment was not considered significant for Hattie's paradigm of learning (Rømer, 2019). Consequently, Hattie's teacher-as-activator is valuable, but Dewey's transactional learning theory highlights the complexity of affective learning between individuals and their environment. Affect is multi-dimensional and given that this study expands on the existing understanding of what is known about affective indicators in PE, additional theories to examine the affective domain should be considered in future research.

In summary, due to the intricacies of affective learning, adopting one theory in this study would have been naïve (Wolcott, 2002). Instead, drawing on multiple theories

allowed me to zoom in and zoom out of the affective learning taking place in PE lessons, gauging what prefigured conditions (i.e. macro and meso; Tinning, 2012) and micro-interactions impact affective learning. Beyond this, conceptualising the affective domain through feelings and emotions provided a relatively new perspective in comparison to motivation, which has been investigated elsewhere (Bureau et al., 2022; Gil-Arias et al., 2020b; Howard et al., 2021; Mitchell et al., 2015; Sierra-Díaz et al., 2019; Teraoka et al., 2023; Wisniewski et al., 2018; Wu et al., 2021).

The implications for research relate to the methodological development of the study and its contribution to the PE discipline in a research context. The expansion of existing research methods in pre-primary and primary PE by practically applying innovative techniques (i.e. PEA) is necessary to support teacher practice, to understand student affective learning. PEA is in its infancy relative to systematic observation techniques used in PE research (see Jachyra, 2016; Smee et al., 2021; Wright and Irwin, 2018). PEA is also isolated mainly to research conducted in Swedish contexts; this study has revealed PEA can successfully be applied in other international settings. Therefore, this could mean an expansion of methods across the doctoral learning community in PE is realistic.

Guided by Quennerstedt and colleagues (2014), this study attempted to investigate affective learning through a series of robust methodological steps. Explicit learning theory (e.g. transactional learning theory), the use of different data (e.g. video-recorded lessons, stimulated recall interviews), and clearly defined methodological steps contributed to the development of this study. Methodologically, my role as a teacher-

researcher highlighted the challenge of observing and evaluating affective learning from a teacher's perspective. Equally, the value of adopting a case study – in the role of teacher-researcher – provided in-depth insights into a phenomenon (i.e. the affective domain) that was not well understood (Harris et al., 2023), and which had not been used previously to comprehend the affective domain in a PE context.

What Now?

The concluding arguments of this thesis are that PE has an important role in addressing mental health concerns among young people. The deliberate integration of the affective domain in PE practice can positively contribute to the education of pre-primary and primary age children, preparing them for unpredictable futures in the context of precarity, mental health concerns, and global issues (e.g. COVID-19 pandemic). This thesis has argued for the affective domain to be deliberately planned for and delivered as part of a broad PE curriculum that does not only prioritise the physical domain. However, there are various limitations to this study that could contribute to future research planning. The following sections outline these limitations and potential directions for future research. Each section refers to three areas: 1) the research context, 2) the level of analysis, and 3) sustained change in affective learning.

The research context provided insight into the similarities and differences of working in an international school. For example, that teaching practices are constrained by the expectations of school leaders, parents, and external organisations. However, the

diverse collection of nationalities and ethnicities enriched the data and findings through observable micro-interactions and dialogue in group interviews. Teacher perspectives were reflective of their experiences in their 'home' country, which was often used to benchmark their teaching practice in the school in this study. While the on-going debate around rigour and quality in qualitative investigations were discussed in Chapter 3, the naturalistic transferability of the data analysis and findings lie with those outside of the study encountering similar experiences (Smith, 2018). Future research could explore optimal contexts through which the affective domain can thrive.

The depth of analysis reflected what may realistically take place in a teaching context. As a teacher in the research process, I was motivated by what was practical in my teaching practice and context, and in turn what may be relevant to colleagues. The use of PEA and practice architectures aligned with these aims. However, emotions are inherently complex and continue to be the source of investigations beyond educational research (Adolphs et al., 2019; Barrett, 2017). Neuroscience is contributing to our understanding of emotions and the affective domain in a variety of educational contexts (Immordino-Yang et al., 2019). Affective neuroscience has been described "a vibrant new discipline" that examines emotions as "functional states, implemented in the activity of neural systems, that regulate complex behaviours" (Adolphs, 2017; 24-25). The suggestion is that the depth of analysis could be richer and more complex when adopting other research methods to zoom in on the affective domain in PE.

The initial aim of this study was to examine how and why affective learning changed over time, but the impact of lockdown and restrictions imposed to curtail the spread of

COVID limited my methodological options. One consequence was the inclusion of practice architectures as a theoretical lens, which created discussion around sustained change in teaching practice (Goodyear et al., 2016). The findings in Chapter 5 saw proposed changes take place across three temporal dimensions (i.e. pre-lockdown, during lockdown, and post-lockdown). However, the changes proposed and attempted by teachers (e.g. a larger focus on student wellbeing rather than sports competition) were not sustained as various conditions prevented this (e.g. the significance of inter-school competition to school leaders and parents). Therefore, future research should consider a longitudinal intervention study to identify how and what sustained change is possible in the affective domain in a PE context.

There are several possibilities for what will happen in the conclusion of this study. It is my intention to share the findings of this study with a wider audience through conferences, publications, and professional learning opportunities. Beyond this the findings have already informed my own teaching practice, the teaching practice of my colleagues, and the experiences of young people (aged 3-7 years) in the school where I continue to be employed.

I have had the opportunity to present and share my research at different stages of my journey. My first conference (AIESEP, Edinburgh 2018) was hugely beneficial as it allowed me to receive feedback on the findings from my pilot study which in turn shaped my methodology and methods. Subsequent online presentations (AIESEP, Banff 2021; BERA SIG Doctoral Talks, 2021; AIESEP, Griffith University 2022) provided different experiences, specifically they provided challenge in that preparation and

delivery of information. The professional growth I experienced attending these conferences has motivated me to attend future events to share the findings of this study (e.g. AIESEP, IAHPEDS, ACHPER).

While sharing the findings of this study at conferences is valuable, it would be prudent to engage with policy makers to contribute to the discourse around affective learning. For example, UNESCO's Quality Physical Education (UNESCO, 2015) policy document set me on the research path back in 2015 with the affective domain considered a core component of QPE yet not fully understood. Therefore, the findings of this study could inform future policy guidelines (i.e. by OECD, UNESCO, WHO) that emphasise the inclusion of the affective domain as part of a holistic PE curriculum to enhance physical activity, mental health, and social connections.

The findings of this study could also help to inform the professional development of teachers and school leaders. Through leading organisations such as SHAPE America, Physical Health and Sport Education (PHASE), and Council of British International Schools (COBIS), there are opportunities to reach and engage with wider audiences related to my location and role as a teacher-researcher. Mental health and wellbeing are positioned as priorities for many international schools in the Asia-Pacific region, particularly post-COVID (Schenker, 2022). While these organisations support ongoing teacher professional development, it would be prudent to consider initial teacher education too. I would seek to reach out to and work with universities, and other providers of teacher education, to support programmes (e.g. PGCE) and to present at

conferences with specific interests in mental health and wellbeing in education (e.g. BERA, AERA, AARE).

Finally, there are two distinct areas that I can drive and develop to conclude this thesis: 1) publications, and 2) curriculum development. First, I set out on this doctoral research journey with the aim of challenging myself academically and grounding my research in my teaching context to develop valuable practices related to affective learning. Along the journey I was able to engage with international experts (e.g. PEA critical friend), apply complex methods, tackle diverse and complex theories, and overcome the challenges of COVID. If I am to be a contributor of knowledge, then I need to embody that by developing my practice. Publishing sections of this thesis, specifically aspects of the methodology in Chapter 3 and findings in Chapter 4, would serve to share the novel aspects of the study. Targeting journals beyond Physical Education and Sport Pedagogy may also be useful. Journals such as the Asia Pacific Journal of Education, Early Childhood Education Journal, and Frontiers Educational Psychology may reach audiences beyond PE and Sport but would be relevant to them.

Secondly, this study has transformed my teaching practice. I am able to look beyond the physical domain as the sole focus in PE lessons. I have taken lessons from all of the literature in some form, however Gert Biesta's paper on values-based education has been profound (Biesta, 2010). Prioritising values as the core learning aspirations in PE lessons and understanding how students can develop pre-determined values through physical activity has led to a sharper focus on the affective domain in my own context. Extrinsic motivation has been reviewed and altered (e.g. the removal of

tangible rewards during lessons and events). Student's feelings towards physical activity and understanding its benefits have been reviewed through a variety of methods (e.g. student self-reporting survey, video-recorded observations, formal school leader observations), with consistently high levels of positive feelings towards physical activity now being reported. Pedagogically, teacher-led is still the preferred option but there are occasions where student-centred activities take place. These changes since 2020, and my enthusiasm to continue conducting research in context have significantly contributed to the PE experiences of the 696 students that I teach each school year.

Chapter Summary

This chapter has discussed and concluded the thesis using three distinct sections: *what happened*, *so what*, and *what now*. In summary, the affective domain remains conceptually complex and dynamic. Theoretical perspectives in this study (i.e. salutogenic, transactional learning theory, and practice architectures) provided novel insight into the affective domain through a zoom in and zoom out approach to data analysis. Identifying and examining the micro-interactions and pedagogical processes that influence the affective domain were possible due to the PEA technique. While practice architectures supported the examination of teacher practice, learning, and socially constructed arrangements (i.e. political, economic, cultural) that facilitate and/or constrain the affective domain.

Schools and teachers have a role to play in the holistic development of PE curricula to move beyond the prioritisation of the physical domain to include affective learning. Organisations can provide improved teacher training and professional development to raise awareness of the affective domain, and how it can be identified and measured through the PEA technique. Similarly, the methodological expansion of the PEA into new research settings can provide further contributions to knowledge and understanding of affective indicators. Expanding our conception of emotions in PE, possibly through affective neuroscience, could enhance the role, impact, and direction of PE as a positive influence on the global mental health crisis facing young people.

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APPENDIX 1

Student Interview Questions

Research Questions:

1) What indicators of the affective domain are observable in a PE context?
2) What pedagogical processes influence indicators of the affective domain, and how?
3) What are the barriers and facilitators of affective learning within a PE context?

Student interview questions:

1. Can you remember what your PE lessons were like before the school closed in March?
2. Did you enjoy PE at school, and why? Is there anything that you miss (or don't miss) about PE lessons before the school closed?
3. Tell me about what you remember doing in those lessons. Was there anything you enjoy ed and/or disliked, and why?
4. What did I (teacher-researcher) do in your PE lessons?
5. What do your friends think about PE?

6. Did you do anything like PE while the school was closed? Physical activity or movement games?
7. Who did you do that with?

8. Why did you choose those activities? Did you do those activities the whole time during lockdown or did you change them day-to-day? Did you do or play anything that we don't normally do in PE? Why do you think to that? Should we do that in PE?
9. Did you take part in any of the online PE lessons that were posted on MyCollege? Which ones? Why did you choose those? Were there any you would like to do again?

10. Have you taken part in a Zoom PE lesson on the big Smartboard (since we were allowed back to school)?
11. What did you do in the lessons? What did you learn? What did the teacher do to help you learn?
12. If we had to continue teaching PE on the Smartboard, what kind of lesson would you like to do? Why would you like to focus on this/these?

13. Do you think we will continue to teach PE through a Smartboard for the next year or will we go back to what PE was before? If you could design a PE lesson when we return to school in August, what would it look like (i.e. environment, tasks, activities, equipment)?
    i. What aspects should we keep from online learning?
    ii. What aspects should we ignore, forget about from online learning?
    iii. What aspects can't we change right now?
    iv. What would you like to do in PE if there were no restrictions?

APPENDIX 2

Teacher Interview Questions

Research Questions:

1) What indicators of the affective domain are observable in a PE context?
2) What pedagogical processes influence indicators of the affective domain, and how?
3) What are the barriers and facilitators of affective learning within a PE context?

Teacher interview questions:

1. What in your view is the main purpose of PE? Can you explain what you value in PE?
2. How do you think your students would describe your PE lessons? Do they all have the same attitude towards PE? How many would describe PE in a similar manner to your own?

3. What is your understanding of the domains of learning? What is your understanding the *affective domain* of learning?

4. How has PE had to adapt during the COVID-19 pandemic? Describe a typical lesson during lockdown.

5. Have your views on the objective of PE changed during this pandemic? What can PE hope to achieve during this pandemic? Have students' attitude towards PE changed during the COVID-19 pandemic?

6. Can you describe a typical lesson now students and teachers are back at school – what do students do, what does the teacher do?
7. What aspects of teaching are similar? What aspects of student attitude are similar/different? What aspects of learning are similar?
8. To what extent is the purpose of PE being met? Are there any aspects of PE that are easier/harder to achieve now? Can you give any examples?

9. What do you think students *learn* in their PE lessons online? Are there any similarities/differences to pre-lockdown? What are the benefits of online lessons? What are the drawbacks?

10. If PE lessons were to continue on Zoom for the foreseeable future, what would be the main skills and knowledge students would develop? How would they develop these? Why these in particular?
11. Do you think gaps will occur in student learning? Do you think these gaps could be developed elsewhere or in other ways (e.g. with family members, online, in different settings)?

12. When the social distancing measures are relaxed and school returns to ‘normal’ will PE be the same? Or does it need to change? Is there anything else you would want to add to what you have already explained?
    1. What aspects should we keep from online learning?
    2. What aspects should we ignore, forget about from online learning?
    3. What aspects can’t we change right now?
    4. What would you like to do in PE if there were no restrictions?