

Rethinking Physical Education Teacher Education in a South African higher education institution

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(Submitted: 30 March 2023; Revision Accepted: 22 May 2023)

DOI: <https://doi.org/10.37597/ajphes.2024.30.1.8>

Abstract

This study explores the rethinking of physical education teacher education in a South African higher education institution. Using students' reflections from a Physical Education (PE) practical module, valuable insights into their experiences were obtained about the current pedagogical approaches in PE as well as potential areas for improvement. The traditional teaching model of PE is based on the idea of teaching students a variety of sports and physical activities. However, this model has been shown to be ineffective in promoting lifelong physical activity. The modern world demands a more holistic approach to health and wellness. Data were collected using an arts-based collage method in combination with written reflections from a group of 139 second-year undergraduate PE students. Thematic analysis was undertaken to gain a comprehensive understanding of the data and extract a broad perspective of the students' experiences. The study aimed to empower student teachers to learn, think, and act creatively within the many educational models that impact their experiences, contributing to the ongoing efforts of rethinking PE teacher education in South African higher education. This research is significant as the students' valuable insights reflected that they could think and work across disciplines. The Sustainable Development Goals (SDGs) proposed by the United Nations and graduate attributes are important concepts that can contribute to student preparation. Using a multi-model educational approach based on cultural–historical theory, higher education institutions can help to develop graduate attributes that could adequately prepare students for success in the workplace and life.

Keywords: Holistic education, graduate attributes, physical education, teacher education, sustainable development goals (SDGs).

How to cite this article:

Jones Couto, C.F., Motlhaolwa, L.C., & Williams, K. (2024). Rethinking Physical Education Teacher Education in a South African higher education institution. *African Journal for Physical Activity and Health Sciences*, 30(1), 112-127. DOI: <https://doi.org/10.37597/ajphes.2024.30.1.8>

Introduction

In South African higher educational institutions, the state of physical education teacher education (PETE) is currently under scrutiny, calling for a rethink about the discipline to address the challenges it faces. Physical education (PE) plays a vital role in the holistic development of students; however, the traditional approach focuses primarily on content knowledge and skills, which fails to capture the

holistic nature of PE and its potential to foster progressive education. To address this gap, scholars such as Bailey *et al.* (2009) and Kirk (2013) have positioned physical learning, cognitive learning, social learning, and affective learning as legitimate learning outcomes in PE. The prevailing philosophical framework in higher education, namely prioritising theory over practical application, relegates PE to a lower position in the hierarchy of educational priorities (Johnson, 2013). Bridging the gap between theory and practice remains a challenge, prompting the need for innovative approaches.

The Curriculum and Assessment Policy Statement (CAPS) incorporates PE as a theme within the Life Orientation (LO) learning area, departing from its previous status as a standalone subject prior to 1994. This places a considerable burden on educators who must simultaneously address both the theoretical and practical aspects of PE along with other modules in the learning area of LO (Muomezie, 2018). However, it should be noted that, due to this integration, PE training programmes in higher education are neither comprehensive nor standardised (Muomezie, 2018) and, therefore, PE teachers are trained under the broader umbrella of disciplines such as kinderkinetics, LO, health sciences, sports sciences, and more. This has resulted in teachers failing to interpret the syllabus correctly and providing meaningful PE activities. In navigating these hurdles, it becomes imperative to delve into the intricate interplay of environmental and contextual variables that serve as the conduits for enhancing the educational dividends of PE. A transformative strategy lies in the realm of leadership, a multifaceted concept that not only entails the active participation of youth in decision-making processes but also places a spotlight on nurturing robust social bonds and championing a deliberate emphasis on the intricacies of the learning journey. This triad of components, recognised as influential forces in the pedagogical landscape (Bailey *et al.*, 2009), forms the linchpin for PE programmes seeking to unlock their true potential and catalyse a profound impact on the holistic development of students.

This study delves into the PE practices of lecturers at a higher education institution (HEI), which focuses on teaching a practical track and field athletics module with a specific attention on the long jump event. It seeks to rethink PETE through the lens of student experiences, employing student reflections as valuable tools for exploration and analysis. In the realm of education, students' reflections hold immense significance. As key stakeholders in their own learning journeys, students possess valuable insights that can shed light on the effectiveness of current pedagogical approaches and identify areas for improvement (RMC Research Corporation, 2009). By voicing their experiences, students contribute to shaping a curriculum that is not only relevant and engaging but also inclusive, catering for diverse students' needs and aspirations.

Rethinking PETE goes beyond the mere transmission of knowledge. It entails embracing a holistic educational approach, where students' physical, cognitive, social, and affective development is nurtured (Bailey *et al.*, 2009; Kirk, 2013). By creatively honing in on the learning process, holistic education fosters authentic learning and allows for individual expression through various modes of instruction (Barfield-McCarty, 2009). Such an approach promotes not only academic growth but also the development of social skills, self-confidence, and self-awareness. In today's rapidly changing world, the prevalence of sedentary behaviour and the ubiquitous influence of technology have led to a decline in physical activity levels among the student population (Woessner, 2021). Moreover, the student population is increasingly diverse, emphasising the importance of inclusive approaches to PE. To address these challenges and create a holistic learning experience, integrating the principles of the Sustainable Development Goals (SDGs) adopted by all the United Nations (UN) Member States in 2015 and aligning with graduate attributes, can empower students to become socially responsible global citizens while promoting physical well-being.

Adding to the ability of society to maintain a healthy quality of life by incorporating multi-model pedagogical approaches, interdisciplinary concepts, and transdisciplinary approaches into the PE curriculum encourages students to develop a broader perspective on PE and its relevance to their lives. By grounding the learning experience in real-life scenarios (that is, engaging with the world), students can connect theoretical concepts to practical applications, thus fostering critical thinking and problem-solving skills (Ramirez *et al.*, 2015). This approach encourages students to engage in self-directed learning, and, as a result, reflect on their strategies and evaluate their effectiveness (Hmelo-Silver, 2004).

It is crucial to acknowledge that students' beliefs and feelings towards PE significantly impact their learning experience. The affective–cognitive structure of attitudes towards PE captures the evaluative implications of students' beliefs and emotions (Wang & Hollett, 2020). By nurturing positive attitudes and emotional connections to PE, educators can create a supportive learning environment that motivates students to actively engage in their own educational journeys.

Rethinking PETE in South African HEIs is essential to bridge the gap between theory and practice and to embrace a holistic and progressive approach to learning. HEI programme planning and renewal (an academic strategy) should focus on aligning graduate attributes and SDGs with the human capital needs of the economy and society. This approach can aim to encapsulate both universal and South African demands while fostering critical citizenship development in students. By prioritising student feedback and incorporating multi-model pedagogical approaches and interdisciplinary and transdisciplinary concepts,

PETE can be transformed into a dynamic and inclusive discipline that nurtures well-rounded student teachers.

Background and Context

The discipline of PE is important as the significance of the quality of PE worldwide is emphasised by international conventions organised by numerous associations, such as the UN Office on Sport for Development and Peace (UNOSDP), the UN Educational, Scientific and Cultural Organization (UNESCO), the Intergovernmental Committee for PE and Sports (CIGEPS), the International Olympic Committee (IOC), and the International Council for Sport Science and PE (ICSSPE). These conventions all agree on the necessity of promoting the capacity building of PE teachers. Therefore, PE teachers must be prepared to identify, interpret, and respond to important differences involving learners, their families, schools, environments, and communities. Differences such as inequality, unsafe neighbourhoods for children's active play (Sharkey & Faber, 2014), diversity, sedentary behaviour, and mental health issues suggest that learning and developmental experiences need to be more customised. These customisations imply that (1) a single programme approach does not suffice for all, (2) teachers need to assess learner needs, characteristics, and aspirations and use this data in their PE planning, and (3) learners should enjoy being physically active by choice (Oliver & Kirk, 2015). A step towards customising PE can be seen globally, where there are multiple models of PE delivery, PETE, and approaches to PE within different education systems.

Educational models are conceptual frameworks that describe a systematic procedure to organise learning experiences in order to achieve specific learning objectives, to serve as a guide for learning, and to help teachers implement learning activities (Waffak *et al.*, 2022). A few models have been developed exclusively for teaching learners in physical activity and related concepts, such as those for sport education, tactical games, and teaching personal and social responsibility. Many teaching models have also been developed in other subject areas and adapted for PE, such as cooperative learning. Whether using singular or multiple educational models at once within PE pedagogical practices, physical educators should consider learners' environments, situations, conditions, and circumstances while aspiring to achieve high standards of PE delivery (UNESCO, 2015). Consequently, PETE should strive to go beyond the traditional content-driven model. This could be achieved through subjective knowledge, which is a state of understanding attained through direct experience.

Teaching, regardless of the level, entails an endeavour to foster a convergence of awareness within individuals by influencing the experiences of others (Chan & Idris, 2017). Learning viewed from an experiential perspective is seen as “the process whereby knowledge is created through the transformation of experience”

(Kolb, 1984, p. 38). This experiential learning approach is founded on the learning philosophies of John Dewey, Kurt Lewis, and Jean Piaget (Miettinen, 2000). These educational models tend to describe multifaceted conditions under which a student is likely to learn most effectively, such as the learning environment, the social structure, the emotional climate, and the physical stimuli received (Metzler, 2017). Research tends to focus on delivering a single model taught in isolation; however, this study focused on empowering student teachers to learn, think, and act creatively within the many models that impact their experience.

In South Africa, learning contexts are socially, historically, and politically configured, reflecting the country's fissured history. Hence, understanding learners' socio-cultural practices, beliefs, and experiences, including their belonging to certain cultural or ethnic groups, is vital to delivering effective PE lessons (Mavuru & Ramnarain, 2017). Curriculum changes in post-apartheid South Africa have mirrored trends in the international context (Rogan & Grayson, 2003), although post-apartheid South Africa has experienced a sequence of policies, regulations, and laws aimed at improving the state and quality of education more than any other transitional democracy (Jansen, 2004). This means that there are significant differences in how PE is delivered across South Africa. Preparing student teachers to address these differences could be done through holistic teaching practices that are contextually sensitive and responsive to learners' needs (Tanase, 2020). The value of a holistic approach towards PE, both delivering PE in different learning environments and addressing the different developmental domains of learners, has been widely acknowledged in the research literature (Dimitrova & Wiium, 2021; Donnelly *et al.*, 2016; Roux, 2020).

A holistic approach towards PE, which is supported by Nesbitt *et al.* (2021), suggests that students need a way to put their classroom knowledge into practice and enhance their mastery of the curriculum. In this study, the lecturers rethought the delivery of the track and field practical module, focusing on the long jump event. The lecturers experimented by applying a practical application of theoretical knowledge to a practical, real-life scenario within a multi-model educational approach. As part of the assessment, the students had to prepare to participate in a long jump competition. Student learning was self-driven as each group member had a role in researching a specific skill in the long jump event and coaching the relevant skill to the group. In the pre-selected groups, the students had a timeline to prepare the selected athletes for the long jump competition. On the day of the long jump competition, learning was transdisciplinary in nature. Management of the athletes, coaches, managers, and photographers was once again self-directed, with each group member playing a role. Talent identification was achieved when selected athletes had to follow particular sports rules and apply their long jump skills practically; coaches had to identify incorrect techniques and give coaching tips to improve performance, which is part of the sports coaching and biomechanics of long jump disciplines. Similarly, the discipline of sports

management was used as managers were responsible for team management that involved team attire and communication, and photographers captured the events of the day which is part of the disciplines of sports photography and journalism.

It was also important for students to experience the various elements that the multi-model educational approach had to offer in order to gain the required competencies; this could not be done through theoretical classes and textbooks alone (Coetzee *et al.*, 2011). Graduate attributes are defined by Bowden (as cited in Barrie, 2006, p. 217) as “the qualities, skills and understandings an HEI community agrees its students should develop during their time with the institution” (p. 217). The Track and Field practical module aimed to promote the development of learning and the acquisition of basic track and field skills and techniques, as well as the ability to teach these skills and techniques. Moreover, a love for movement and respect for the sports type and other participants should be cultivated. Focusing on improving graduate attributes can enhance students’ employability. Therefore, HEI should focus on developing essential knowledge and graduate attributes to ensure that students can enter the career of their choice (Chen & Gursoy, 2008). Furthermore, institutions should ensure that students master the requisite knowledge and graduate attributes during their academic preparation. To achieve this, institutions may consider a multi-model educational approach together with the use of a different style to teaching, such as experiential learning, to benefit students.

Schreck *et al.* (2020) describe experiential learning as that which occurs through doing, with reflection forming a critical part of the success of the learning process. As part of the assessment in this study, after the long jump competition, the students were required to make a collage of the photographs taken on the day of the competition and reflect on their experiences. It is important for students to have the opportunity to reflect on their experiences, analyse and query the current situation, and think critically about the implications of future experiences (Monk, 2013). The experiential learning process of rethinking the delivery of the Track and Field practical module mimicked the real world with its varied and unpredictable outcomes, which encouraged the students to take responsibility for their own learning (Schreck *et al.*, 2020). PE exposes students to a range of experiences that enable them to develop the knowledge and skills they need to make the most of all opportunities and shape new forms of global citizenship (UNESCO, 2015).

Global stakeholders engage in policy reform and development to address poverty and inequality (Ndaguba & Hanyane, 2019). As such, the needs of all future students and learners should be at the forefront of policy development and implementation. What is warranted is the development of standardised reform grounded in strongly formulated public policy that acknowledges diversity in a centralised education system. Transformative customisations to deliver PE which

are consistent with the goals of UN agencies and national governments that collectively drive an agenda for global transformation are envisaged by the UN's SDGs. PE is a critical factor in the nexus between education and development, while other factors include inclusivity, equality, and equitable education for all. Therefore, to contribute to the capacity building of PETE, lecturers should offer diverse and customised opportunities to meet their students' needs, characteristics, and aspirations and strive for the goal of lifetime involvement in physical activity (Oliver & Kirk, 2015). As lecturers in higher education who are at the forefront of PETE in South Africa, we, the authors of this paper, critically consider and strive to promote health and physical well-being in our students.

Methodology

Research design

In this study, we adopted a descriptive single case study design with University of Pretoria PE students' reflections as a unit of analysis. The phenomenology approach seeks to describe the essence of the phenomenon under study by exploring it from the perspective of the students. A qualitative, descriptive, phenomenological approach was used to analyse the students' reflections about their experiences of PETE.

Theoretical underpinning

This study was based on the cultural–historical theory, which is an approach to cognition outlined by Cole and Engeström (1993). This theory uses the notion of distributed cognition and emphasises the importance of mediation. The key aspect of this approach is the notion that cognition or knowledge can be distributed through a mediated process between people. The process supports the case for an approach to learning that primarily involves sense-making by engaging with the world at the same time as being shaped by it socially and culturally. This view of “mind in the world” suggests that the construction of knowledge involves a process of interpretation. In such a process, meaning is ascribed to events and objects in a way in which the individual's mind actively engages with both physical and external reality and the social and cultural context in which it is found. Culturally-based schemas are formed through engagement with the world (D'Andrade, 1981). To explore the efficacy of reflective assignments, undergraduate students who were enrolled in the Track and Field practical module were required to write a group reflection, make a collage of the photographs taken during the long jump competition, and use it to reflect on their experiences.

Study sample

The sample of the study comprised 139 second-year undergraduate PE students at the University of Pretoria, South Africa. The students were randomly divided into 10 mixed gender groups and required to work together, and reflect critically on their experiences. To ensure rigour, we used purposeful sampling by selecting all

the students who had enrolled for the Track and Field practical module based on the premise that as they had participated in the practical module, they would be able to share their insights and experiences of the module. The recruitment of the participants took place during the long jump assessment.

Data collection

An arts-based collage method is grounded on the premise that images provide an opportunity for participants to creatively engage, conceptualise ideas, reflect on their experiences, and express their stories (Culshaw, 2019). Collage allows for reflection on the visual reconstruction of experiences and offers a creative way for participants to explore their experiences (Colomer *et al.*, 2020; Culshaw, 2019). The decision to use collages was aimed at creating an opportunity for the participants to have a creative voice and engage concepts beyond the written word. Thus, to obtain insight into the students' experiences and perspectives on the current PE pedagogical approaches and potential areas for improvement, an arts-based collage method was applied in combination with the written reflections of the participants to construct the data. The groups of participants were requested to take photographs during the long jump competition and use their photographs to create collages. After the long jump competition, the participants had to write a group reflection on their experiences. The collages were used to elicit the participants' experiences about the long jump teaching and learning process, and elaborate on their thoughts using written text. This allowed the researchers to engage deeply with the students' experiences and collect rich, authentic qualitative data. The participants submitted the reflections online as part of the Track and Field practical module assessment.

Data analysis and trustworthiness

Using cultural–historical theory as a lens, data from the written group reflections and collages were deductively analysed to explore the students' experiences of the teaching and learning process. The method of creating collages was intended to support a narrative, thematic analysis of the students' experiences. The second and third authors conducted a preliminary analysis of the data. The process included reading and rereading the data to familiarise themselves with it (Clarke & Braun, 2014). We used three levels of data scrutiny to analyse the data derived from the group reflections. For the first level, we used the four phases of thematic analysis developed by Clarke and Braun (2014), namely familiarisation with the data; organising data to generate patterns and themes; generating themes and data display, including detailed analysis and ensuring that the themes were coherent; and drawing conclusions and verification.

The second level of data processing involved the analysis of the collage using the semiotic visual analysis method. Semiotic visual analysis consists of identifying and interpreting the context of the image production and how signs in the image convey the meaning (Johnson & Christensen, 2017). We focused on the

descriptive visual impact and what the photographs in the collage portrayed and subsequently performed an interpretive analysis by looking at how the collage reflected or contradicted the written text. Lastly, we compared all the groups' collages and written reflections and arranged them into themes. The third level of data analysis included integrating and combining the themes from the first and second levels of analysis. The data produced six themes, namely ethical behaviour, teamwork, respect for diversity, communication skills, presentation skills, and critical thinking. The process of unifying and integrating the themes included a meeting between the second and third authors to discuss and agree on the themes that had emerged. We also engaged in peer debriefing to establish trustworthiness and credibility.

This was an in-depth study, even though the sample was limited to university students. Therefore, the sample selection process constrained the generalisability of the findings across South Africa and other contexts. The dependability of this study was enhanced through reflection between all the researchers to ensure that the findings were consistent with the data collected.

Ethics

Ethical clearance was obtained from the Faculty of Education's Ethics Committee, University of Pretoria, South Africa (Ref.: EDU139/21). The research was conducted in accordance with all relevant ethical guidelines and principles stipulated by the university. Informed consent was obtained from all participants.

Findings and Discussion

Qualitative data from the students' reflections were subjected to thematic analysis, which is a widely used qualitative approach to analyse information. Through thematic analysis, the researchers uncovered the diverse experiences of the students. The following themes which emerged, i.e., ethical behaviour, teamwork, respect for diversity, communication skills, presentation skills, and critical thinking, were integrated through the reflections presented. This approach provided valuable insights into how the practical module contributed to the rethinking of PETE. The study yielded an understanding of the students' experiences and shed light on the effectiveness of the module's pedagogical methods.

It is important for lecturers to deliver inclusive and equitable education with equal learning opportunities for all students. The lecturers encouraged the students to reflect on their experiences about the teaching and learning process of the long jump assessment. With the adoption of a multi-model educational approach, the students embraced the opportunity to personalise their learning. They did so by evaluating which approaches worked effectively and which did not. One student highlighted the significance of this approach, reflecting, "*This experience was*

interesting for me because we got to see the athletics day or the long jump competition from two perspectives: the perspective of an athlete and the perspective of an 'official' in a sense." This exposure to different roles not only enriched their understanding but also *"provided valuable insights into the efforts involved in organising an official athletics day"*. As another student indicated, *"This athletics day opened our eyes to the amount of work that goes into the preparation of an official athletics day."* This customisation exceeded our expectations as lecturers because the students demonstrated skills and knowledge that extended beyond what we had initially planned and taught in the classroom.

One of the long jumpers reflected that they had been extremely nervous but they were excited to jump and try out the skills that they had learned in the previous weeks. After the first jump, it was not as bad as they had anticipated, and they ended up enjoying themselves more than they had expected. This reflection on the long jumper's experience serves as an example of how the students' performances, both in terms of the physical aspect for the long jumpers and in terms of their ability to work effectively together as a team to complete the assessment, exceeded the lecturers' initial expectations. This demonstrates their remarkable abilities that went beyond the classroom.

The multi-model educational approach allows for the development of a range of graduate attributes. Traditional educational approaches tend to focus on the development of cognitive skills, such as knowledge and critical thinking. However, graduate attributes also include non-cognitive skills, such as ethical behaviour, teamwork, respect for diversity, communication, and presentation skills (Bransford *et al.*, 2000). Multi-model educational approaches can develop these non-cognitive skills by providing students with opportunities to learn in different ways, such as through cooperative or collaborative learning, experiential learning, self-directed learning, and a cultural–historical approach. Multi-model educational approaches that focus specifically on the collaboration between students can play a pivotal role in facilitating the transition from the acquisition of content knowledge to the cultivation of subjective knowledge. Furthermore, cultural–historical theory emphasises the importance of social interaction in learning. This theory suggests that students learn by interacting with others and by participating in meaningful activities (Daniels, 2002). Multi-model educational approaches based on cultural–historical theory can help develop graduate attributes by providing opportunities for students to collaborate with others as a team with respect to diversity, communication, participation in real-world problem-solving, critical thinking and reflection on their learning.

Exposing students to transdisciplinary learning experiences can foster the development of essential graduate attributes, equipping them with the necessary skills and competencies to excel in a complex and interconnected world. The students themselves assigned different roles to each group member, which

encouraged them to think out of the box and see problems from multiple perspectives. The transdisciplinary learning experience required that the athletes selected through talent identification followed the sport's rules and applied their physical long jump skills. The coaches had to identify incorrectly used techniques and gave coaching tips to improve the student's performance (sports coaching and biomechanics of long jump). The managers were responsible for team management, which involved team attire and communication (sports management), and the photographers captured the events of the day (sports photography and journalism). A student reflected, "*Our group had good teamwork on the competition day, and our managers and coaches were great and communicated well with us.*" The different roles of the athletes, coaches, managers, and photographers contributed greatly to the students' teamwork, fostering a sense of responsibility, respect for each other, and communication skills as they had to communicate in the most effective way with a diverse group of students and had to think critically about how to solve problems innovatively across multiple disciplines.

The students were engaged in the direct application of skills, theories, and models, and their learning was influenced by the social, cultural, and historical context in which it occurred. As learning is not a one-size-fits-all process, the learning process is enhanced by the students interacting with each other. The diverse group of students contributed to the learning experience as each student had different experiences, perspectives and ways of interacting. Having a diversity of students pointed to a respect for diversity and contributed to teamwork and communication skills. This was confirmed by the student, who reflected: "*Since we were put into random groups, it meant that we had to learn to get along with new people. This was very good for us because it put us outside of our comfort zones, and that helped us grow as a group.*"

The students were exposed to an environment where they had to try and understand the diverse social and cultural factors, the context of their group members' lives, and how they contributed to the classroom discussion. With each member having a specific role, the learning experience included everyone. The relationships that formed between the students influenced their motivation to learn and successfully complete the assignment. This learning experience turned out to be relevant and engaging as the students developed knowledge about the content of PE and experienced a learning environment which required necessary adjustment and adaptation. This learning, in turn, contributed to their pedagogical content knowledge, as verified by the reflection:

"Our athletes' first initial feelings towards competition day brought about mixed emotions. Many of us did not want to be jumpers in the beginning, but in the end, we all had a great deal of fun and laughs." The first jump was exactly what the athletes needed to overcome their nerves. Everything after that was smooth sailing.

Similarly, like the athletes who initially had reservations about being jumpers, the students faced challenges in their learning environment but eventually found their footing. The first jump for the athletes acted as a turning point to stabilise their nerves, and, in a similar way, the student's willingness to adjust and adapt to the learning environment led to a positive transformation in their understanding of PE. The content of PE is focused mainly on health and well-being by promoting lifelong physical activity. Together with the aim of creating an inclusive, equal, and equitable learning environment, the students' experiences reflected that the long jump assessment contributed to an understanding of the world around them and the challenges that other students faced. One group reflected: "*The day was enlightening, and we all gained knowledge while participating.*" One member of our group described the day beautifully. She said, "*The day was about trying, and the outcomes did not matter because it was about having fun and doing it for your team.*"

The interaction between the students was valuable as it contributed to the graduate attributes as set out in the themes of this study, namely ethical behaviour, teamwork, respect for diversity, communication skills, presentation skills, and critical thinking. The different student groups had to follow the rules of the long jump by behaving in an ethical manner; the students had to work together as a team in a respectable way as they had to communicate, think critically, and present their work effectively. Another group of students reflected: "*We can all agree that this was not just a day to get marks or get attendance. It was a day that we learned something new, and we were able to apply what we had learnt and be able to capture the joys of the day.*"

By integrating social development goals and fostering graduate attributes within education, the students gained valuable experiences that not only promoted health and well-being but also enabled them to understand the world better, empathise with others' challenges, and develop essential skills for success in both their personal and professional lives. The graduate attributes exhibited by the students during the long jump assignment highlighted the profound impact of such inclusive and equitable learning environments.

Exploring the rethinking of PETE in South African higher education is significant as the students' valuable insights reflected that they could think and work across disciplines. Social development goals and graduate attributes are both important concepts that can contribute to student preparation. An important challenge of this study was that most of the groups needed help to reflect on their learning (Hmelo-Silver, 2004). A dedicated facilitator can support student reflection, but in larger groups and with younger students, other techniques may be helpful. One suggested approach to improve student reflection was to use structured journaling (Hmelo-Silver, 2004). Furthermore, the multi-model approach, which is transdisciplinary in nature, developed the skills and knowledge that the students needed to be

successful in the 21st century. Using a multi-model educational approach based on cultural–historical theory, HEIs can help to develop graduate attributes that will prepare students for success in the workplace and life.

Conclusions and Policy Implications

In conclusion, rethinking PETE in South African higher education institutions is essential to bridge the gap between theory and practice. This can be achieved by embracing a holistic and progressive approach to multi-model educational methods. PE is critically important in the nexus between education and development, as is inclusivity, equality, and equitable education for all. By prioritising student feedback, incorporating customised learning outcomes, multiple models of teaching, and interdisciplinary and transdisciplinary concepts, PETE can be transformed into a dynamic and inclusive discipline that nurtures well-rounded individuals who can promote lifelong physical activity, thereby contributing to society's health and physical well-being. PE can be used as a tool to promote graduate attributes that will equip students with a comprehensive set of skills, knowledge, and personal qualities that enable them to excel in their chosen careers and contribute effectively to society, thus fostering lifelong learning and adaptability. As lecturers in higher education and being at the forefront of PETE in South Africa, we strongly consider and advocate adequate development of standardised reform grounded in well-formulated public policy that acknowledges diversity in the centralised education system. Based on the findings of this study, we propose a shift in PETE towards a practice-based curriculum and pedagogies that will incorporate subjective knowledge and provide opportunities for collaborative learning that can engender effective student–teacher preparation.

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